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Buyers' Reference
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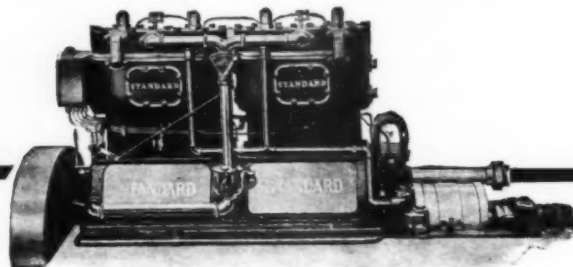
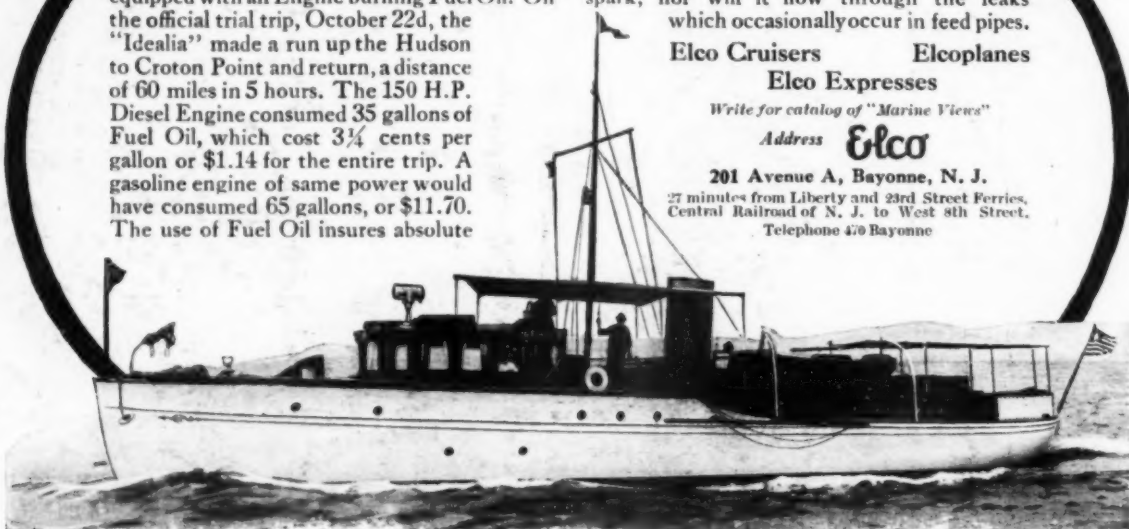
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December, 1913

**MOTOR
BOATING**

Vol. XII, No. 6

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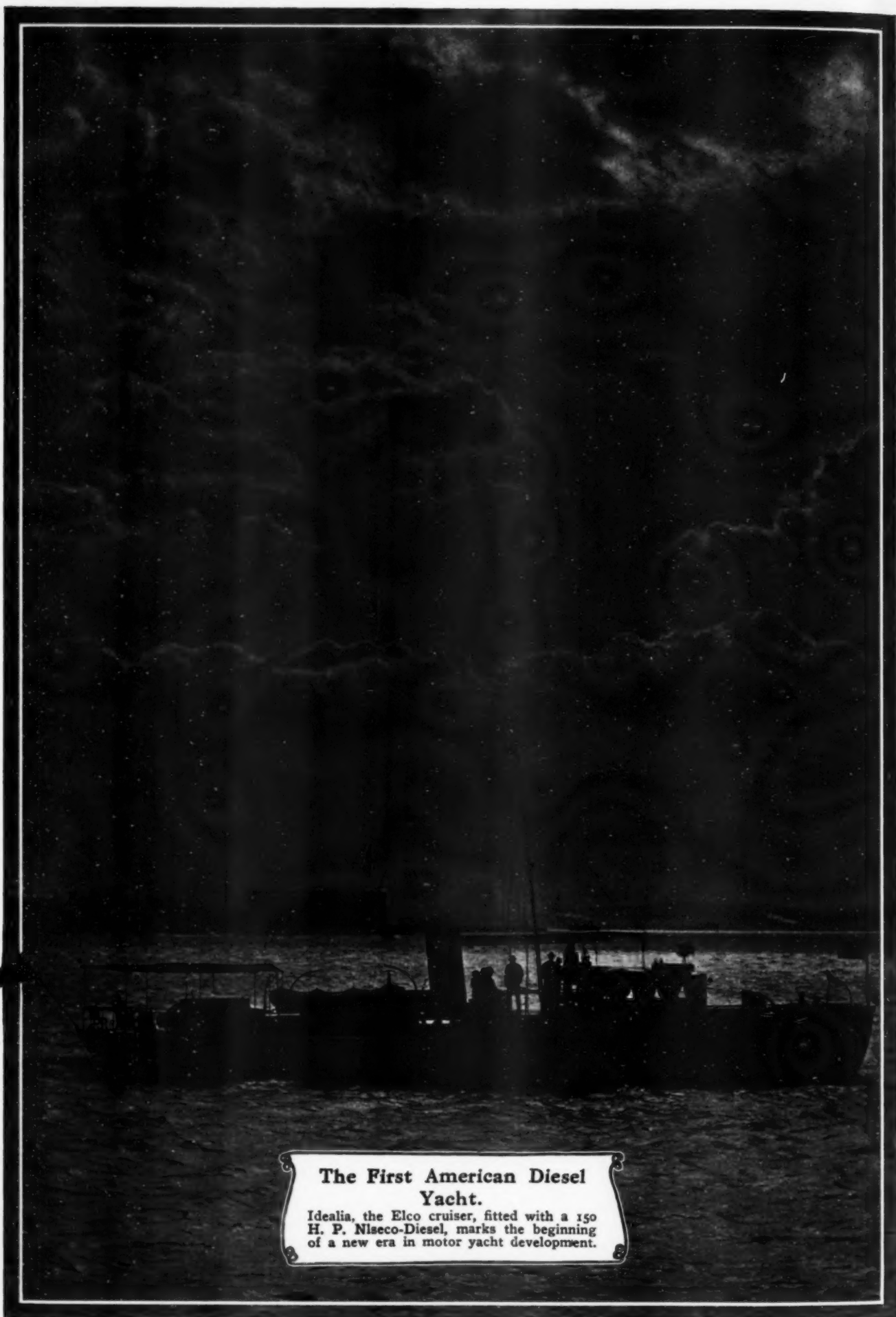
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**The First American Diesel
Yacht.**

Idealia, the Elco cruiser, fitted with a 150
H. P. Niseco-Diesel, marks the beginning
of a new era in motor yacht development.

MOTOR BOATING

THE NATIONAL MAGAZINE OF MOTOR BOATING

For Buyers Here and Abroad.

Features That Make This Buyers' Reference and Export Number Particularly Valuable.
Segregating and Classifying Material So That It May Readily Be Used.

DEPRECATING any appearance of self-glorification, we yet feel that the present Buyers' Reference and Export Number of MOTOR BOATING should not go to press without a word of attention being called to some of its outstanding features. We have aimed (and with all becoming humility believe, successfully) to make this the most comprehensive and satisfactorily arranged compendium of the sort ever attempted in the motor boating industry. As a general thing, such compilations consist of a mass of heterogeneous material, undigested and so poorly arranged that their real value is practically nil. In the present issue of MOTOR BOATING, the great mass of material will be found, but it has been so carefully classified and arranged that each item of information is ready to the seeker's hand for instant use. We feel sure that our readers will agree with this estimate of our Buyers' Reference and Export compendium, and in serving their uses we shall have attained our object.

Under the classification of "Motor Yachts," we have grouped those motor-driven craft of 70 feet overall length and over, among them being the 140-footer that is the largest motor yacht at present building.

In the category of "Medium Cruisers" we have placed boats of this class having an overall length of less than 70 feet.

The Express and Day Cruiser class takes in motor boats which have a speed capability of more than fourteen knots.

Hydroplanes and Runabouts scarcely need an introduction, including, as they do, that great class of "sporting" craft, which are making such a wide appeal to the out-door proclivities of the American people.

Under "Shoal Draft Cruisers and House Boats," we have a notable collection of a class of motor boats that are constantly increasing in popularity from their unusual adaptability to a combination of the delights of domesticity and travel.

In the "Stock Boat" department we have a notable assortment of boats that are constantly kept on hand by the American motor boat builders, so that the aspiring motor boatman may not be delayed in the enjoyment of his favorite sport by the preparation of plans and construction of a specially built craft.

Our showing of American marine motors is particularly noteworthy. Two hundred different makes are represented in the compilation, and no less than 1,600 different models. This feature in itself would be enough to stamp the issue as a notable contribution to the literature of American motor boating.

The motors are grouped under the two-cycle and four-cycle classes, and subdivided again according as they are Heavy Duty, Medium Duty and High Speed creations. A final segregation is made by grouping together the one, the two, the three and the four-cylinder engines of each of the three classifications mentioned above. This method being followed for both two and four-cyle power plants, gives us a total of twenty-four segregated groups in the final analysis. By this method of classification, each unit falls readily into its proper place in the general scheme and its identification by the reader is simplicity itself.

In the matter of parts and accessories, the issue is likewise notable. Grouped under the headings, "Reversing Devices," "Electrical Appliances," and "General Accessories," the motor boatman will find every conceivable device and appliance for his comfort and benefit that his heart could desire.

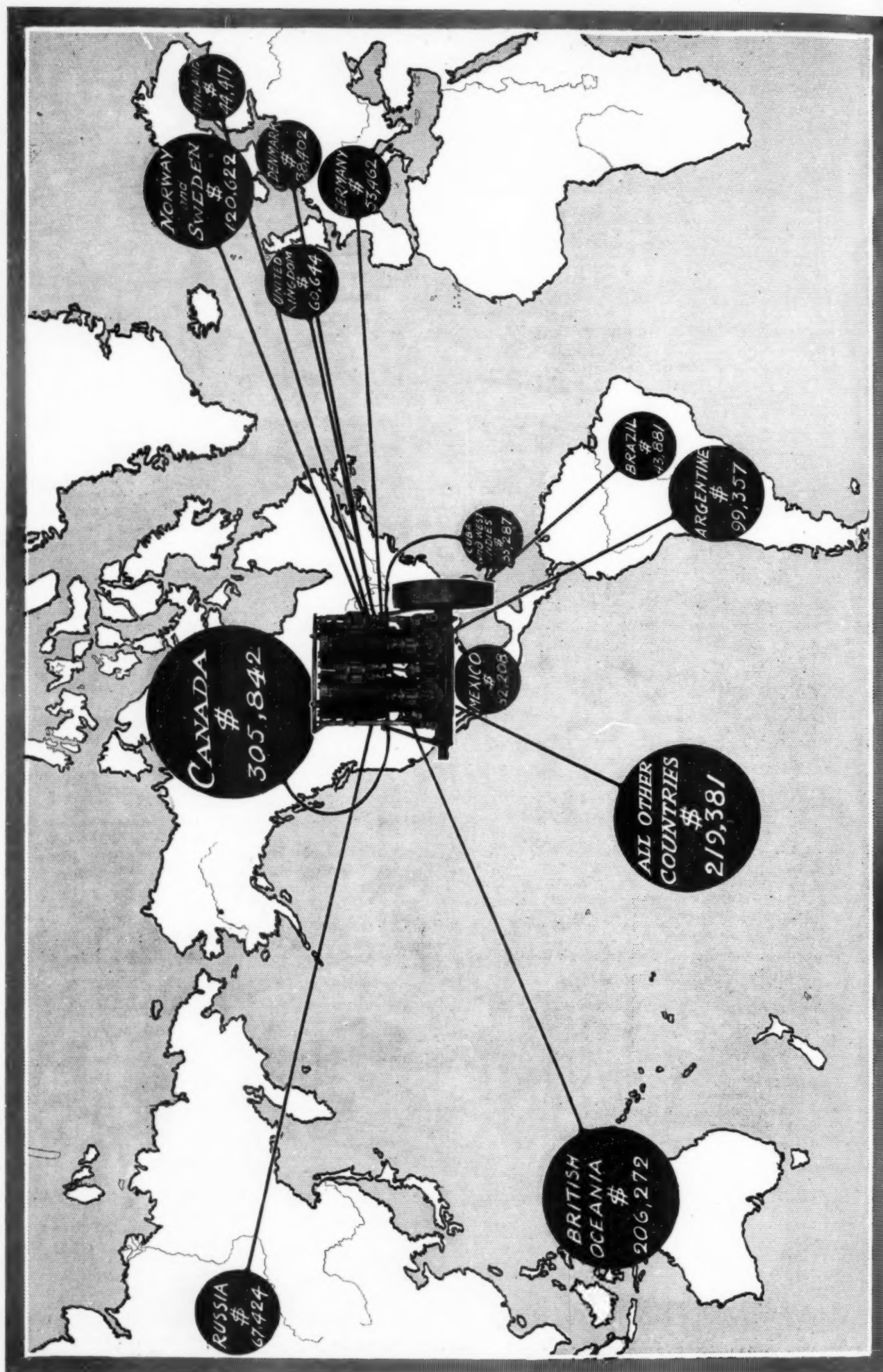
We may be allowed to say a few words in regard to the steady growth of MOTOR BOATING, as shown in the advertising carried in our Buyers' Reference and Export numbers, past and

present. In 1909, when we instituted this feature, the advertising equaled 10,458 agate lines. In 1910 it had grown to 44,184 lines, and in 1911 it amounted to 48,384 lines. 1912 saw a healthy increase to 57,456 lines, and the present number, even so early as the date of our going to press with this first form, shows the impressive total of 70,560 agate lines. We might also mention that the first nine issues of MOTOR BOATING for 1913 show a gain of 12,096 agate lines of advertising over the corresponding period of last year, this being an average gain of 1,344 lines per issue. A steady and consistent growth of this kind brings satisfaction in the inevitable conclusion that the policy of the magazine is meeting with the approval of the great body of the American motor boating industry. For 1914 we are justified in predicting an advance even more startling.

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The Foreign Buyers of American Marine Motors and What They Bought Last Year.



Canada was the biggest buyer of American marine motors during the fiscal year ending with June, 1912. Next came Australia, New Zealand and the rest of British Oceania. Northern Europe and South America were also large buyers, as will be seen by the black circles which are proportional in area to the amount purchased.

Exporting American Motors.

How Users, in Other Lands are Buying the Products of Our Marine Motor Manufacturers.
The Possibilities of Export Trade and Where the Most Likely Markets Are.

By B. Olney Hough,
Editor, American Exporter.

MOTOR boats are not enumerated among the reputed attractions of the Garden of Eden, yet according to the American Consul at Bagdad, with whom I talked yesterday, forty or fifty motor boats are likely in the near future to be darting along the Euphrates and Tigris Rivers not very far from what is believed to have been the site of the Garden of Eden. There is something distinctly romantic in the very thought of shipping American motor boats or engines to the city of the Arabian Nights. The American Consul says it has been done, that there are four or five of them already there and that a large local house is planning to import a lot of marine motors to install in boats which it will build in Bagdad after the native model. Here is an inspiring thought. If motor boats and motors separately are to be sold in Bagdad, where will they not find a market?

Unfortunately it is a physical impossibility to show any statistics regarding exports of American marine motors covering a term of years. It was not until last year, that is, for the fiscal year closing June 30, 1912, that the Division of Statistics, Bureau of Foreign and Domestic Commerce, as it is now called, specifically differentiated marine gasoline motors, or, in fact, internal combustion engines of any sort. Previously all motors of this description, for no matter what use intended, were lumped together under the general heading of "Engines, all other"—than steam. The growing bulk of this one item seems at last to have determined the able and conscientious statistician in charge of these figures at Washington to make the separation which people interested in it have for several years been inquiring about. But thus it is that we have reliable statistics regarding the exports of our marine gasoline motors only for the year 1912, when our foreign shipments amounted to \$1,347,199, and for the fiscal year of 1913, whose export shipments totaled \$1,586,926.

Whatever ratio may appear between the two totals of our exports as just quoted, the fact within everybody's knowledge remains that our marine engines are cutting a very wide swath in the trade of almost every other country and are constantly growing in demand as experiments prove their suitability for use in various waters, their general reliability and the several preferential qualities in competition with engines from other manufacturers which only become adequately appreciated through actual use.

The foreign trade in marine motors may almost be said to have started of itself, usually through advertising, for it is only in very recent years that our engine builders have gone out in person to drum up new business and to inspire old customers. Not so much personal work is being done by our engine builders even now as really ought to be done. Distinctly great advantages are to be derived from the personal visitation of company officials from factories in the United States, or even from plain drummers who may be sent out from this country.

* * *

A PART from any question of increasing his trade in motors, a manufacturer has this also to consider—the adequate demonstration in actual work of the products he has shipped to a foreign customer, involving his very name for reliability and desirability, and more than likely his whole future in the market where a foothold has been obtained.

While I know of several American manufacturers of marine motors who are today counting their export trade as their most valued asset and shipping all the way from one-third to one-half and even two-thirds of their total production to foreign customers, yet, as I have often enough written in the past, our motor manufacturers are not by any means manifesting the aggressiveness in getting and building up foreign markets for their products which the encouragement they have received warrants them in manifesting.

Last winter and spring I spent four or five months in a trip around the Caribbean Sea, the "American Mediterranean" as it is coming more and more to be called. At not one single port visited was I able to discover any evidence of genuine enterprise on the part of an American motor boat or marine engine manufacturer, any aggressive effort to introduce his

products in a satisfactory way. Almost all of these little markets around the Caribbean offer real opportunities for motor boating that are not to be despised by anybody, but in each and every case some educational work has got to be done. Take Cuba to begin with.

In Havana Harbor there are a number of motor boat tenders always ready for hire and utilized largely in taking off passengers from arriving ships. There is plenty of occupation for boats of this sort despite the existence of tenders usually supplied by steamship agents free of charge to passengers coming by their lines. It is true that the harbor of Havana does not in itself offer particularly attractive opportunities to the motor boatman who loves boating for the sport there is in it, yet the sea surrounding Cuba is often enough calm as a mill-pond, and attractive excursions can be made from Havana, as from other Cuban harbors, up and down the adjoining stretches of coast. Furthermore, there are Cubans aplenty who have money to invest in almost any sort of sport, when they "are shown." The trouble in Cuba is that nobody seems to have made the attempt to "show" them what motor boating for pleasure means.

Not only is there a chance of selling pleasure boats in Cuba, but there ought to be an excellent opportunity to introduce motors for freight boats, for all around the hundreds of miles of coast of the island are there located rich sugar plantations and mills, lumbering establishments, mines, and at a great many of the ports cargo and passengers are brought ashore from foreign or coastwise steamers in tenders. One and all of these might very advantageously use motor boats.

* * *

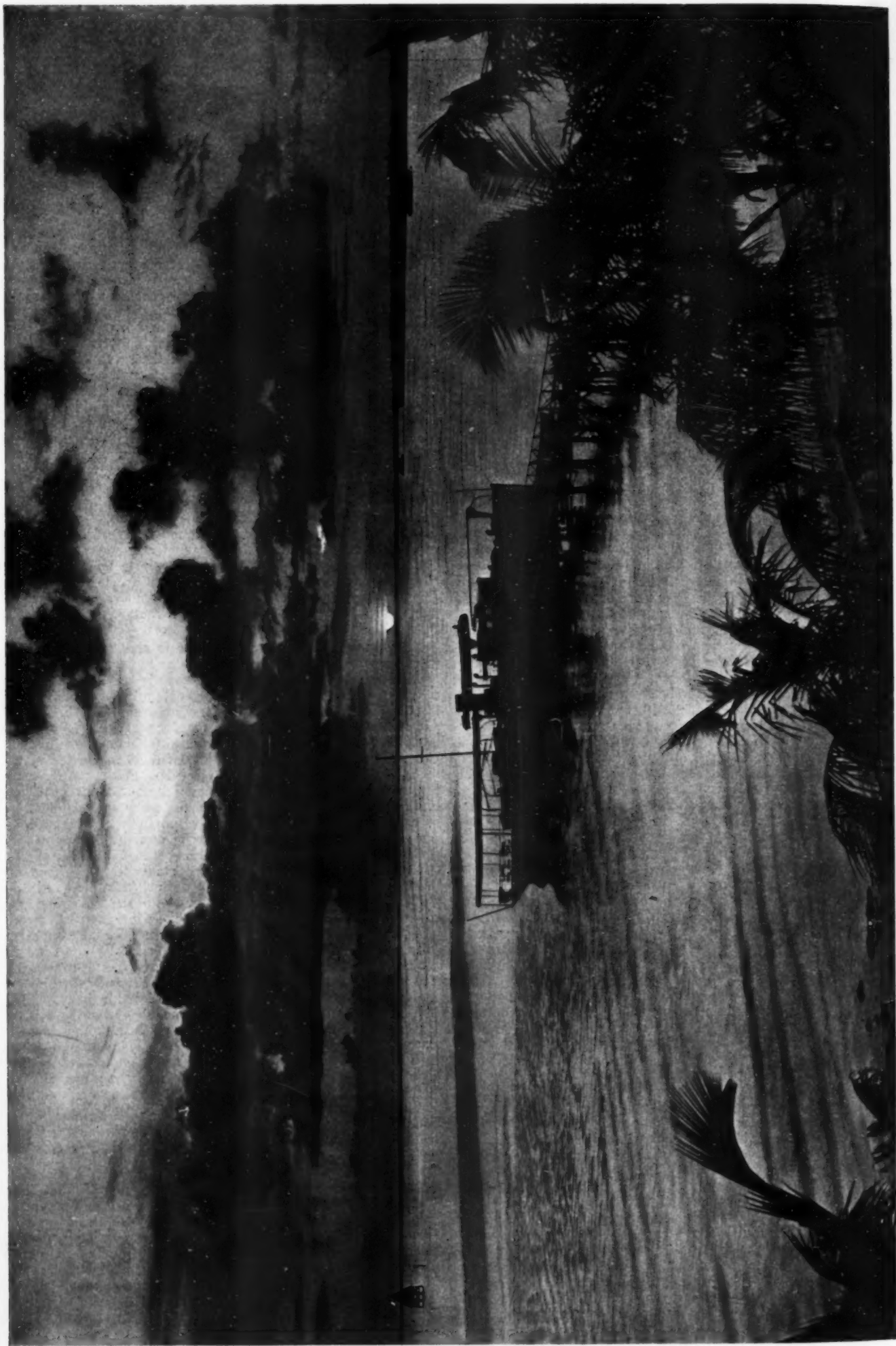
IN making the Caribbean trip that is now so popular, one always calls at Jamaica. So far as motor boats are concerned, Jamaica is rather worse off than is Cuba, yet there are plenty of coast towns where motor boats might be utilized and in fact a sufficient coastwise traffic around the island of Jamaica to support two or more regular services.

Going from Jamaica to the Isthmus of Panama, one finds at Colon, as well as at the Panama end of the Canal, a few specimens of motor boats, but the wonderful possibilities of developing trade with the interior in utilizing motor boats on the several rivers, have hardly as yet been studied by any of the native or foreign business houses, nor have possibilities in this direction been studied and used by American manufacturers in presenting to possible buyers, including those houses already doing business with the interior, the advantages offered by the motor boat in the development of such a trade. The Republic of Panama is a small country, we are apt to think, and so it is, yet the absolute isolation of quite widely separated centers of population and trade is almost incredible. The situation can be changed in a jiffy if enterprising local people can be sufficiently enthused by American manufacturers in presenting arguments for their own products and carefully considered projects for the development of commerce with them.

The ports of Colombia—Cartagena, Barranquilla, Santa Marta, etc.—boast of but few motor boats, although a good many might be utilized.

In Venezuela, the would-be exporter is confronted with a high blank wall through which there is but one opening, but that is a pretty good one. The use of motor boats is, to all intents and purposes, absolutely prohibited by the government of Venezuela, so far as the coast towns and the Orinoco River are concerned. There are good and sufficient reasons for this prohibition which need not be further explained here than by the single hint—"smuggling." But at Maracaibo, Venezuela, a thriving city on the great shallow lake and gulf that bear the same name, the commercial capital of western Venezuela, and almost equal in commercial importance to Caracas itself—here motor boats are permitted. Local boating clubs of several different nationalities each boast of one or two "club" motor boats. If the purchase of these boats is sometimes influenced by what, for euphony's sake, we may call "policy," yet I am confident that with right approach on the part of a competent salesman, an important trade might be built up.

(Continued on page 156)



Punta Rassa on the west coast of Florida at the entrance to the Caloosahatchee. The yacht at the dock is the 75-foot motor cruiser Ethel M. Ward, owned by Mr. Charles Willis Ward, of New York, and built by the Mathews Boat Co. She is equipped with two heavy duty Murray and Tregurtha motors.

New Southern Cruising Grounds.

From the East to the West Coast of Florida Through the Everglades and Lake Okeechobee.
What May Be Expected in the Way of Difficulties and the Precautions to Avoid Them.

By Alfred F. Loomis.

MUCH has been written of Florida's East Coast and the beautiful waterways down among the keys from Miami to Key West, but the new cruising grounds from the East to the West Coast through the Everglades and Lake Okeechobee have been exploited to any extent only by the land selling companies, who will gladly give you title to lots along this route, which in general characteristics strongly resemble a sidewalk reservation in Venice. Presuming that the reader is unfamiliar with this pioneer country, we will up anchor at Miami and run the inside course to Ft. Lauderdale, a pioneer town whose streets are lined with deadly soda water saloons. This town divides the old from the new, and leaving it, the way leads up New River 4 miles to the mouth of the North New River Canal on the starboard hand. Then for 57 miles against a slowly slackening current the boat is pushed until the town of Megathl, consisting of two portable houses and one barge located near and in the South Bay of Lake Okeechobee is reached. The way up the canal will not have been marked with any special excitement, though a touch of it may have been experienced in running up the washout around a defunct lock, where an eight-mile boat makes headway and little more against the rushing current. If the pilgrim has expected to find the Everglades a tangle of tropical vegetation with lianas and boa constrictors hanging from the underbrush, and cottonmouths and 'gators gliding along the water, he has been disappointed to see the broad, open expanse of sawgrass which stretches away on every side with only an occasional clump of custard apples to vary the scene. The animal life, too, along the canal is a little disappointing, for the alligators are exceedingly wary of boats which they know instinctively to be strangers, and the chances of stepping on a moccasin in foraging along the banks for a wounded duck are no more than slight.

This stretch of 61 miles from Lauderdale is all that can be made in one day's running, so the hook is dropped over at Port Megathlin, which is Megathl's more dignified name, and the screens

put in place for the night. In cruising down the keys, old boatmen always lie to leeward of a key, for there the mosquitoes cannot smell them out, and so do not come to the party, but in Okeechobee, unless one anchors in the middle of the lake, which procedure would be about as advisable as stopping the night in the middle of Lake Michigan, the insects assemble from all directions, and the screens must be riveted in and battened down to withstand their onslaughts. It is hinted in these waters that a boat going up with a leaky hull will come out tight as a drum with all her seams caulked up by the myriad suicidal mosquitoes in their misguided endeavor to reach the host.

At the start of the next run, Rita Island will be left on the port hand and a course laid for Observation Island, lying off the mouth of Three-Mile Canal and the Caloosahatchee. In this thirty-mile stretch, the navigator of your craft may partake of all the thrills of the pioneer adventurer, for Uncle Sam has yet to bring his hydrographic men with their sounding devices into this region. Whatever information you may have will be unofficial, like the present writing, or by word of mouth, but the trip is a safe one if Observation Island, with its outlying reef, is given a wide berth, for there is plenty of water elsewhere beneath any keel which can make its way up the canal.

However, it will be well to observe the weather signs, for the jump is a four-hour one for the average cruiser and the lake is noted for its sudden squalls. Okeechobee in all its extent of approximately 35 by 25 miles is nowhere over 50 feet in depth, and its very shallowness makes it subject to violent, choppy seas. It appears that a great degree of buoyancy is lacking by reason of the water's freshness, and certain it is that a sea which could be ridden with ease in Chesapeake Bay will pile an alarming amount of green, or rather brown, water on the forward deck. But with proper precautions there is no danger for a well found cruiser on this body of water, and only the big, flatbottom stern wheelers which
(Continued on page 162)



A bit of Caloosahatchee, which is the Indian way of saying Beautiful River.

American Motor Boats Abroad.

To What Foreign Countries the Exports of Complete Motor Boats from This Country Go.
A Survey of this Branch of the Business During the Past Five Years.

TEN years ago our Bureau of Statistics at Washington, whose duty it is to compile the returns supplied from the various custom houses through which the export shipments of the country are cleared, awoke to the fact that a large part of the shipments which had previously been enumerated under the heading, "Vessels Sold Abroad—Steamers," really consisted of motor boats and not steamers at all, so the official classification was changed, and a new heading—"Motor Boats"—made. But surely no statistics ever compiled are more irritating, perhaps more meaningless, than those under this head since 1904. As you pore over the columns of figures you begin, dimly, to appreciate this irritation and something of the cause for it. You will note, for example, in one of the early years a shipment of one boat only to one country valued at perhaps \$25,000 or \$50,000, and the next year there may be sixteen or eighteen smaller boats shipped to that country whose aggregate value will not be the value of the one boat of the year before. For reasons like this the actual figures of our exports of motor boats do not convey any serious lesson, unless it is the very general one that, on the whole, our trade for the past ten years has shown steady growth, and the great world outside our borders continues to manifest its appreciation of American products in this line. Here are the total shipments of American motor boats to all foreign countries for the ten years from 1904 to 1913, inclusive:

1904.....\$210,048	1909.....\$356,211
1905..... 786,180	1910..... 353,576
1906..... 303,233	1911..... 381,940
1907..... 180,708	1912..... 684,329
1908..... 330,203	1913..... 768,523

The extraordinary figures for 1905 are explained by unusual shipments that year to Belgium (10 boats valued at \$200,000) and to Germany (15 boats worth \$382,000). Obviously, these twenty-thousand-dollar vessels were out of the ordinary, and should not be considered as interrupting the steady ratio of progress of our proper exports in this line, from \$210,000 in 1904, to \$768,00 in 1913.

The foregoing table is impressive, but perhaps detailed account of the distribution of our motor boats for recent years will be even more instructive. The accompanying curve of exports for the five years ending 1912 may be studied with advantage. Unfortunately, the distribution of our exports of motor boats for 1913, amounting to \$768,523, is not yet available, and will probably not be issued by the Bureau of Statistics for a month or two to come. But, as has been suggested, such puzzling anomalies as the

shipment to France in 1910 of 28 boats, valued at \$6,766, and in 1911 of five boats only, but valued at \$9,420, followed by three boats in the next year, 1912, having a valuation of only \$528, really convey no lesson beyond that of an existence in France of buyers who are quite willing to invest in motor boats of one sort or another, as something attractive and compelling may be presented to them in the right way.

The manifest difficulties in the way of shipping motor boats to foreign countries are evidently no real handicap to the expansion of our export trade. The costliness of ocean freights, usually charged on the basis of cubical contents of the boat, or the crate in which it may be encased as shipped by steamers, is one of the principal factors that handicap us. Foreign buyers are very apt to be startled by the aggregate freight charge, and declare at once that no matter how superior the American boat, they will prefer, in the future, to build their own hulls and install in them motors purchased separately. It would seem, therefore, the part of wisdom for our motor boat builders who are seeking a share of the undoubted and demonstrated trade that exists abroad, to emphasize more strenuously the real values and the actual points of superiority of the boats that will be shipped, complete, from this country. Such advantages certainly exist, and, on the other hand, there is not a country in the world where there are not rich people to whom a few dollars one way or the other makes little difference, and who always want the best there is to be had in everything.

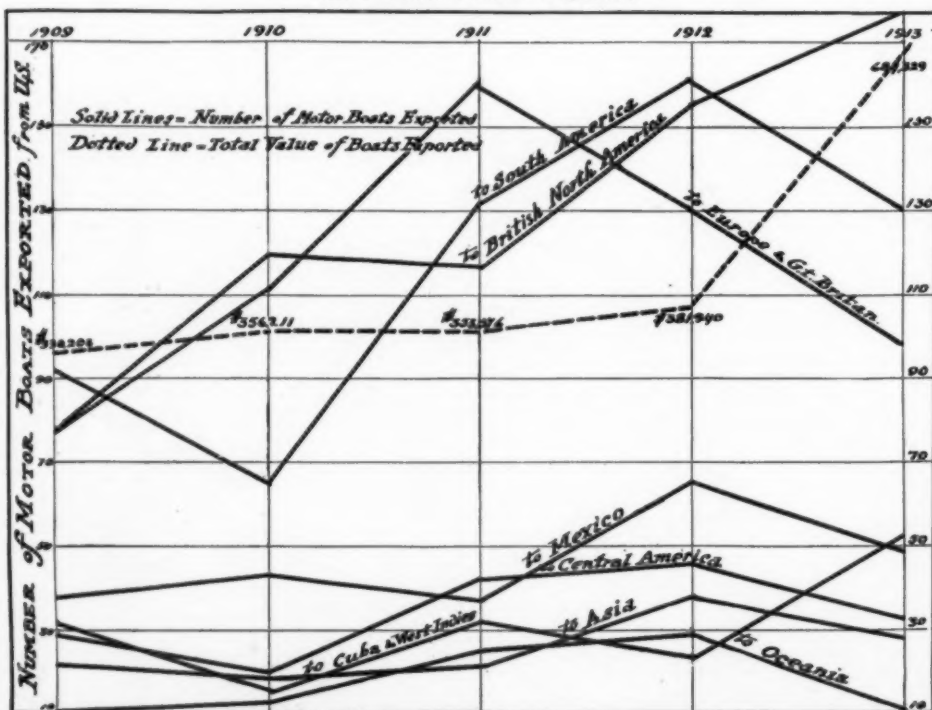
Another suggestion may be offered for what it is worth. Freight costs are not the only deterrent to the more adequate expansion of our foreign business in motor boats. It sometimes, perhaps frequently, happens that a boat is too large to go down the hatchway of the steamer, or too long to be easily manipulated into a snug space in the hold of a vessel, and, therefore, is carried on deck, a condition which may or may not have some influence on the freight rate, but which, in any case, is not

usually conducive to the prepossessing appearance of paint and varnish by the time the boat has arrived at its destination, unless the most careful and thorough protection is afforded such shipments, enough to guard altogether against damages from high seas, or even salt spray and rain or sleet. Then, too, might it not be possible for some enterprising manufacturer to manage what, for want of a better term, I may call the "nesting together" of several boats of slightly varying size? Even though I cannot claim to be a naval architect or possess any technical knowledge in this line worth speaking of, I think I can imagine some objections to this proposal. But can they not be overcome with the exercise of a little ingenuity? The main thing, it would seem, must first be to obtain foreign agents sufficiently enthusiastic over the boat-builder's products to order in a fashion that would enable such shipments as this scheme proposes. This is purely a question of salesmanship, however, and would naturally be based, in part, on a demonstration of what could actually be promised, and, ultimately, performed in the way of freight economies through such shipping. The removal of the motors and their separate shipment, to enable close packing of several boats together, would not entail nearly as much engineering ability on the part of ignorant buyers as would the installation of the same motors in boats of local construction.

At this point it may be well to hint that at least one serious charge has recently been made by some foreign purchasers of American motor boats. That charge is that, very likely without intention on the part of the maker, the buyer has been misled as to the speed of the boat which was purchased. Sometimes this has happened because the boats had to struggle against a strong river current, and hence a more powerful motor ought to have been advised than that actually shipped, but sometimes, too, it may be feared there has been a tendency on the part of shippers, or, very likely, their export agents, to exaggerate the possibilities of the boats that have been recommended for purchase.

This is one of the things which foreign buyers of almost anything American frequently complain of, and frequently enough with some justice; that is, what the peoples of other countries are wont to proclaim as "American brag." It is a very good thing to leave severely alone when cultivating foreign trade. Under rather than over-estimates are always surest to result in the ultimate satisfaction of foreign customers and a permanent and increasingly profitable business. Taken altogether, however, the American production of motor boats far excels that of any other country as regards construction, seaworthiness, etc.

The Number of American Motor Boats Exported During the Past Five Years.



THE AMERICAN MOTOR YACHT & MOTOR BOAT

Development of the Motor Yacht.

How the Internal Combustion Engine Worked Its Way Into the Domain of Steam.
A Review of the Advantages of Gasoline Equipment Over Its Older Rival.

By Scott J. Mathews.

ON ITS advent in yachting, at the beginning of the present century, the gasoline motor found itself face to face with a formidable rival in the marine steam engine—then an established institution, as the result of a half century of evolution. Beginning, with some crude experiments, in the early fifties, the steam pleasure fleet, by the end of the century, had reached a point that was relatively near perfection, thanks to the triple-expansion engine and the water-tube boiler. Of the many types in which it was represented, the least successful was the small open, or cabin launch; the next size, the cruising launch of about 60 feet was less open to criticism; while the cruising steam yachts of 100 to 125, were considered, in their day, very satisfactory craft. In the larger sizes of coasting yachts and the big sea cruisers, the advantages of steam were many, and the disadvantages proportionately few, as compared with the smaller sizes. As an auxiliary to sail, steam was of little use in the medium and smaller yachts, though effective in the larger classes.

Very early in its career—in fact, before its true position as an infant phenomenon was in the least appreciated by the yachting fraternity—the gasoline engine displaced its older brother in the smaller launches, bringing into being, in a few years, a better and almost innumerable class of pleasure launches. While progress was a little less rapid in the next larger class of cruising launch, the ultimate result was as marked in both extent and degree; such a radical improvement of the type, as is exemplified in the raised-deck cruiser, and an enormous growth in point of numbers. No less wonderful has been the effect on the auxiliary division, at the present time embracing the great majority of the old sailing fleet. While steam, with its bulky and troublesome accessories of boiler, bunkers and smokestack, was hardly applicable to sailing craft of less than 100 feet length, there are to-day hundreds of small sailing craft of less than 25 feet whose utility is more than doubled by a gasoline motor so small and inexpensive as to be a negligible quantity in the disposition of space, the cost of construction, and the expense of running. Even more important in its beneficial effects upon yachting, especially yachting under sail, is the modern fleet of cruising gasoline auxiliaries in all sizes up to 100 feet length.

Though vastly superior to its predecessors—the steam engine proper and the kerosene, naphtha and alcohol engines—the gasoline motor, in its first decade afloat, was lacking in power, reliability and efficiency

for the propulsion of other than the medium sizes of launches; and in no way suitable for a vessel of upward of 100 feet in length. One of the most important steps of its development, if not the first toward the large and powerful motors of to-day, was the building, in 1903, of the six-cylinder 8 x 10 motor for the speed launch, Standard, so justly celebrated as the first of a new type. The way thus opened was quickly followed by many American builders, and where there was no answer ten years ago to the question of where to find a motor of sufficient power for a cruising yacht, the only difficulty to-day is to choose between gasoline, kerosene or heavy oil as a fuel, and the best for some specific use of a score or more of motors of proven power, reliability and efficiency.

The contest between steam and gasoline in the smaller launches was merely nominal; the disadvantages of the older power were only too well known to its most ardent adherents; when the fight progressed to the medium type of speed or cruising launch, it was still painfully one-sided, all the advantages being on the side of the gasoline motor. When, however, the fight was carried up to the cruising class of 100 feet and upward, coasting, if not seagoing craft, in which the power, reliability and efficiency of the engines were prime considerations, the issue was not decided as quickly. In this class, steam was represented by the modern adaptation of torpedo boat practice in the light multi-tubular boiler and the open-frame, high-speed quadruple or triple-expansion engine; in some cases with oil fuel supplanting the dust, smoke and ashes of coal. The essentials—power, reliability and efficiency—were adequately represented in such a plant, and a well-designed steam cruiser of 100 to 150 feet was very justly considered a most satisfactory craft.

The actual issue in this class was not forced until the slow, but irresistible growth of the gasoline motor, from a single-cylinder, two-cycle engine of two or three horsepower, had reached the stage of the six and eight-cylinder unit of 100 to 500 horsepower, with the choice of several fuels. With such a power within reach at a price that compared favorably with that of a steam plant, there came up first the question of the gain in weight through the absence of the boiler and its appurtenances, the coal, water and tanks. Without going into actual figures, it is evident that even the heavier types of motors with cast iron bases must show a material saving when taken alone, except for tank and gasoline, compared with the steam plant of engine, boiler, fuel, auxiliaries and water—the gain being still greater in the open-

base type of motor with cylinders supported on steel columns. This saving of weight is directly convertible into lessened displacement, giving greater speed with the same power, and, at the same time, a decrease of draft. Hardly less important is the saving of space—a three-fold gain in actual cubic feet diverted from engine space to owner's accommodation; in a better general arrangement of all details of the accommodation plan; and in the utilization of the center of the vessel, where the breadth is greatest, for the larger saloons and staterooms. While in the steam yacht there was but one possible place for the machinery—the center of the vessel for a length of a third of the waterline—the gasoline motor meekly permits itself to be relegated to a subordinate position, well forward or abaft the widest part of the vessel, and even to be separated by half the length of the boat, if necessary, from its fuel. Even greater than the gain in space is the increased comfort; or, it may better be said, the absence of some very serious discomforts which are inevitable with steam generated, as is almost always the case, from coal. The dirt, dust and general inconvenience of coaling are unknown, the fuel coming aboard silently and rapidly through a hose; smoke and ashes are alike unknown, the exhaust of a well-designed motor yacht being disposed of in a way that is entirely unobjectionable. The heat of the furnaces and the boiler of hot water and steam is a serious inconvenience in many steam yachts, this disadvantage being greater as the size of the yacht decreases. Even where licensed officers are carried, the smaller engine-room crew of the motor yacht shows a gain in wages, food and smaller crew space.

Though of such recent origin, the motor yacht, qualified by design as well as size for coasting and actual sea cruises, has attained the dignity of a distinct class, well known through a number of successful boats. One of these is Thelma, a twin-screw vessel of steel, designed and built in 1911 by the Gas Engine and Power Company and C. L. Seabury & Co., Cons., for Mr. Morton F. Plant, as a tender to the schooner Elena. This yacht has a length of 138 feet, a breadth of 16 feet 4 inches, and a draft of 4 feet 9 inches, being intended for use about Long Island Sound; she carries two six-cylinder Speedway motors, 11 x 12 cylinders. Another large motor yacht of greater draft, 7 feet, as she is used for off-shore cruising, being now in the West Indies, is the new Tarantula, built by Lawley & Son, for Mr. W. K. Vanderbilt, Jr., from the designs

(Continued on page 156)

The Biggest

Having a Length of 140 Feet with a Waterline Length of 129 Feet 6 Inches. Equipped with Two 275 H. P. Engines Which Will Give

THIS 140-foot boat, designed by the Gas Engine and Power Company, and Charles L. Seabury & Co., Consolidated, Morris Heights, N. Y., for ocean-going cruising, and has been planned to give every comfort possible in a boat of this type.

The fuel capacity of this yacht is six thousand gallons, the gasoline being contained in three separate tanks, which are installed amidships aft of the motor compartment. Separating these tanks from the motor compartment and owner's quarters, which are located directly aft of the tanks, are steel bulkheads. These tanks are set in copper pans with drains arranged from the top of pans overboard. In case of a leak in the tanks, this drainage system prevents the gasoline from leaking into the bilge. Each tank has a separate shut-off valve. These tanks are also arranged with valves to keep an equal level of gaso-

line in the three at compartment, which amidship, has two gasoline engines, developing 268-275 h.p. There is also a Speedway generator set of the type, 4 1/2" bore in conjunction with storage battery capacity of 400 ampere-hours.

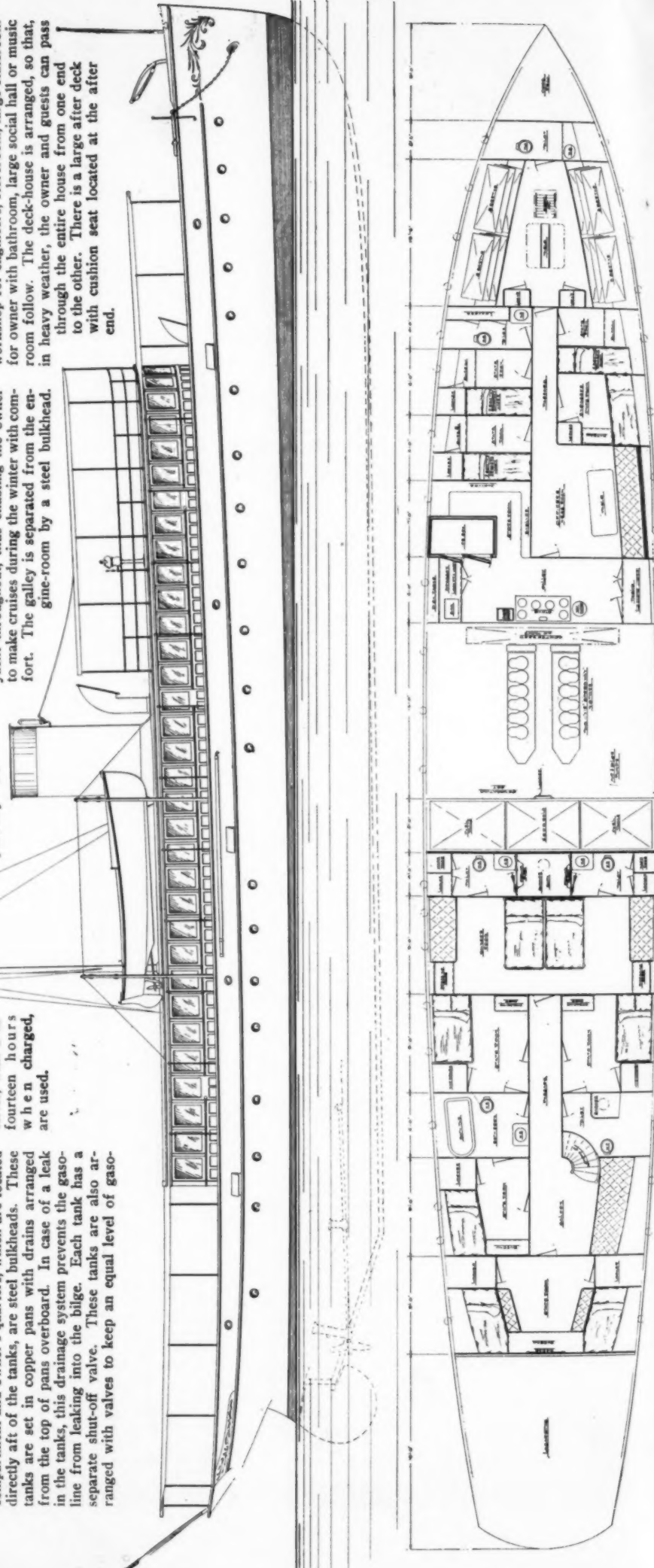
In the forepeak is an arrangement for the storage of anchor chains. Next aft, separated by steel bulkhead, are the crew's quarters, following which are the officers' quarters with staterooms for the captain, mate, steward and engineers. In this compartment there is also an officers' mess-room. Next aft is a galley with large storeroom and icebox. There is also a hot water heating boiler located in this compartment which has sufficient capacity for heating the yacht throughout, thus enabling the owner to make cruises during the winter with comfort. The galley is separated from the engine-room by a steel bulkhead.

Aft of the gasoline compartment is the owner's stateroom which runs the full width of the vessel, and next to this room are a five-guest stateroom, bathroom and large saloon. There are also located in the owner's and guests' quarters shower baths with running water.

Above there is a long deck-house with dining saloon forward. The steward's pantry is next aft and captain's stateroom and guests' toilet-room, and workshop for engineers, storeroom, large stateroom for owner with bathroom, large social hall or music room follow. The deck-house is arranged, so that, in heavy weather, the owner and guests can pass through the entire house from one end to the other. There is a large after deck with cushion seat located at the after end.

Gasoline Motor Yacht.

ne Length of 129 Feet 6 Inches. Equipped with Two 275 H. P. Engines Which Will Her a Speed of 13 Miles per Hour.



With dimensions of 140' L. O. A., 129' 6" L. W. L., 22' beam and 8' draft, this vessel is entitled to premier position among the motor yachts. Her nearest competitor has a greater length overall by 9', but her waterline length is 12' less, her beam 3' 9" less, and she draws only 7' of water.

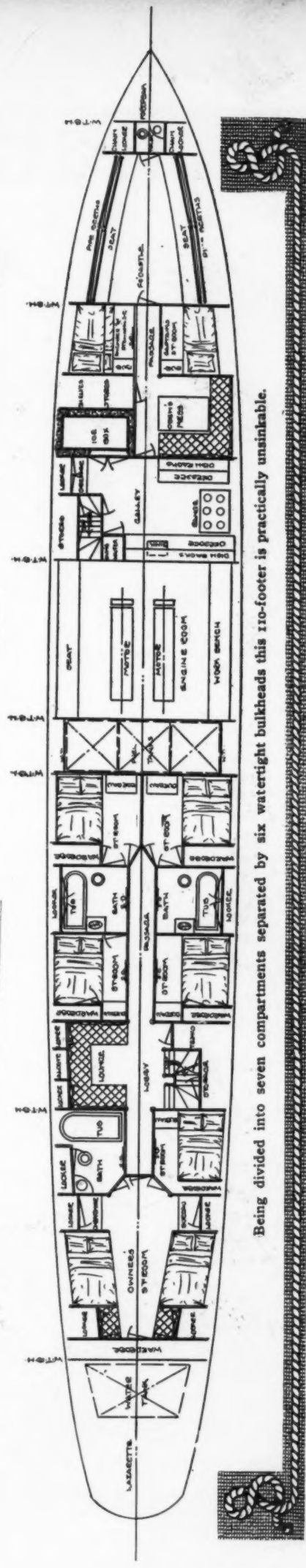
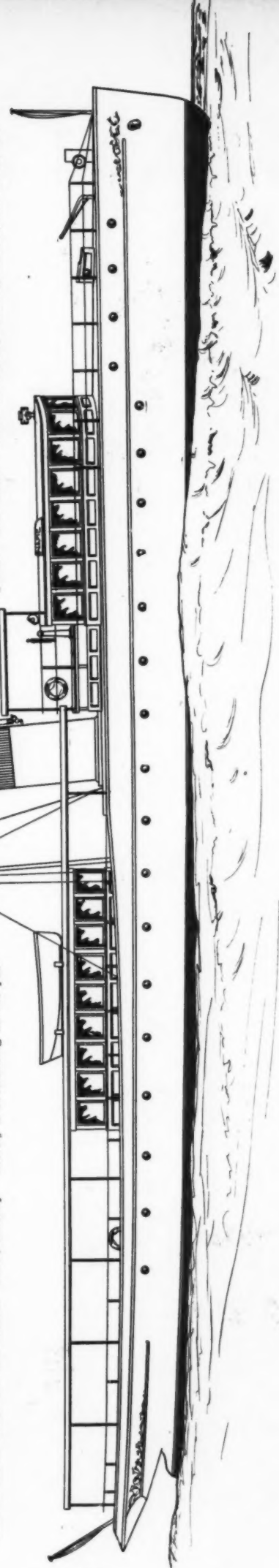
Symmetrical Yacht with Unusual Accommodations.

OF THE big fellows designed this year, the boat shown on this page is perhaps worthy of special notice. Designed by Whittlesey & Whittlesey, New York City, 110 feet in length, she is of the raised-deck type, with bridge-deck aft of the forward house. As laid out below decks, the owner's apartments, with the exception of the dining saloon or forward deck-house, are all aft, and separated from the crew's quarters by a watertight steel bulkhead. The arrangement of the staterooms, etc., is remarkably compact, and room has been found for six staterooms, as well as three bathrooms and a fair-sized lounge. In the forward end of the boat, too, accommodations are ample, there being, in addition to the fore-castle, staterooms for the ship's officers, and a separate mess-room for the crew. Taking each compartment individually into consideration, the design of the boat is as follows: Aft of a watertight bulkhead in the forepeak is a small allotment of space devoted to the crew's toilet, and on either side of this a locker for the chains. Then, directly

aft is the fore-castle with two upper and lower pipe berths on each side. Exit is had from this room by way of a ladder to the forward deck, and also through a doorway into a passage running aft to the galley. On either side of this passageway forward are identical staterooms for the captain, and engineer and steward. The captain's room is fitted with berth and bureau, while the other stateroom has bureau and upper and lower berths. Aft of the captain's stateroom is the mess-hall for the crew. This is merely a broadening of the pas-

sageway which it adjoins, a transom extending on the starboard and after sides, and a table being placed at the right angle formed. Located opposite it are a storeroom with a door opening into the passageway and a large insulated ice chest opening into the galley. The galley extends the full width of the boat and is fitted with range, water heater, sink, dressers, dish racks, and dumbwaiter. Stairs up on the port side communicate with the dining saloon. The engine-room is separated from the compartments on either side of it by watertight bulkheads and is entered by way of a ladder. The power plant consists of two main motors and a smaller one for operating the lighting plant. The usual

equipment of work bench, tool locker, etc., is included. Aft of the engine-room is the fuel compartment also protected by watertight bulkheads, and following this the owner's quarters commence. A passageway connects all the rooms and terminates at the forward end with two doors opening into the two forward staterooms. These twin rooms are fitted with full width berth, bureau and locker, and each has access to a private bathroom aft. The bathrooms are likewise identical in design and are equipped with tub, toilet, and wash basin. Sliding doors give communication with the passageway and they are still further connected with two more staterooms aft. Next aft on the port side comes a lounging room furnished with a deeply upholstered transom extending on three sides. Following this on the starboard side is a fifth stateroom, and across the passageway is another bathroom. The owner's room is quite naturally the largest compartment below decks and is fitted with double berths, bureau, chiffonier, etc.



Being divided into seven compartments separated by six watertight bulkheads this 110-footer is practically unsinkable.

INDIAN -

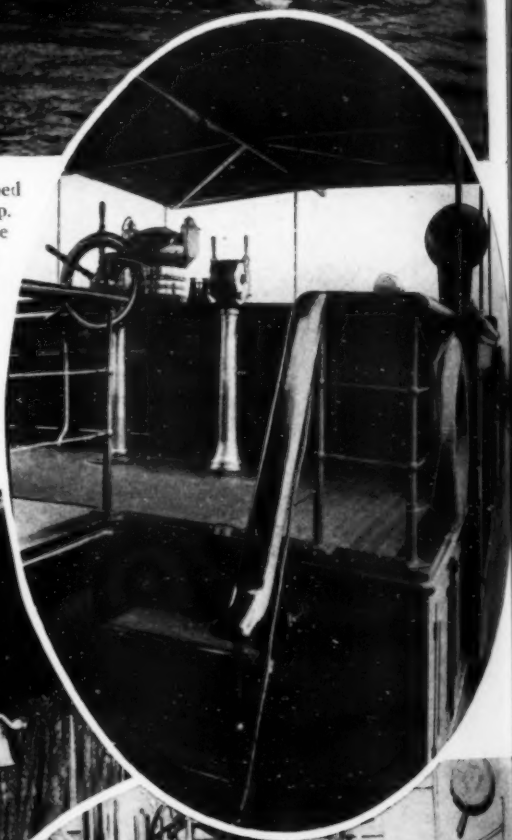


Indian at full speed.

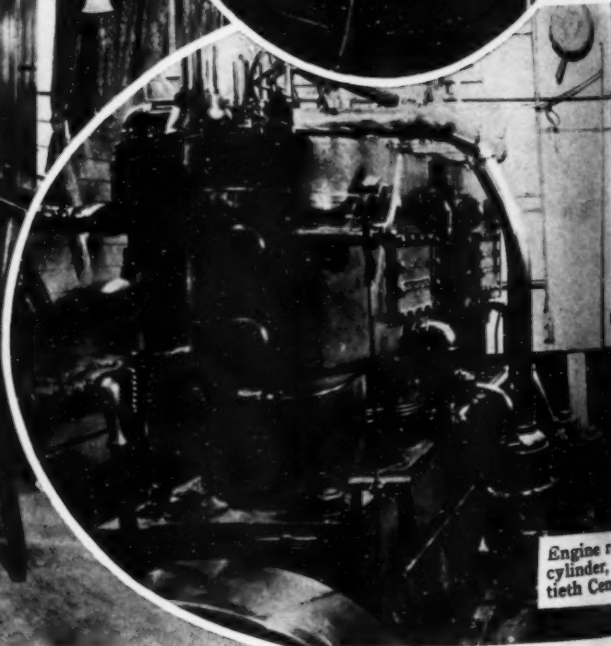
THE motor yacht Indian is from designs of Messrs. Gielow & Orr, of New York, and was built by the New York Yacht, Launch and Engine Company at Morris Heights, and delivered to the owner, Mr. Joseph Van Vleck, of New York City, this year. The Indian is 100 feet over all by 16 feet 6 inches beam, and 4 feet 6 inches draft. She is laid out with crew's quarters forward, having a fo'castle with berths for four men and an engineer's and captain's stateroom and a mess-room. Aft of the crew's quarters is the engine-room, located just under the deck-house. The engine-room

is complete in every detail, and is equipped with two 4-cylinder 8 x 10-inch 60-75 h.p. 20th Century motors which drive the boat at a speed of 10 miles per hour. The engine-room is also equipped with a General Electric 3-k.w. generating outfit with the necessary fixtures. The gasoline tanks are just aft of the engine-room and extend the full width of the boat.

The owner's quarters take up the balance of the boat, and consist of twin staterooms just aft of the gaso-



The dining saloon is finished in mahogany.



Engine room with 4-cylinder, 20th Century motors.

The Newest 100-Footer



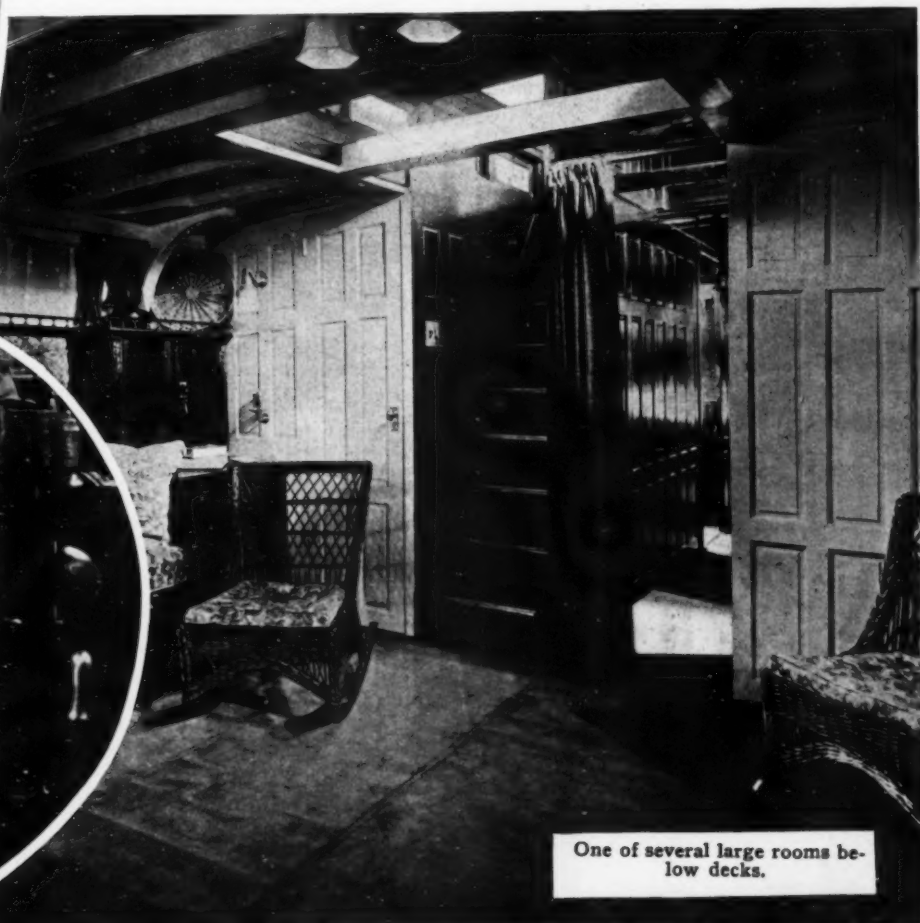
The spacious after deck of Indian.

line tanks, having double berth built in with chiffonier and porcelain wash basin. This room is finished in white enamel with handsomely raised panel work. The main saloon is next, and is finished in mahogany; on each side of the saloon is a Pullman couch with desk, chiffoniers, etc., in each corner and the main stairs leading from this saloon to the main deck, and back of the stairs is a large locker. Aft of the stairs is a single stateroom, and on the opposite side of the passage there is another single stateroom and a bathroom. These staterooms are equipped

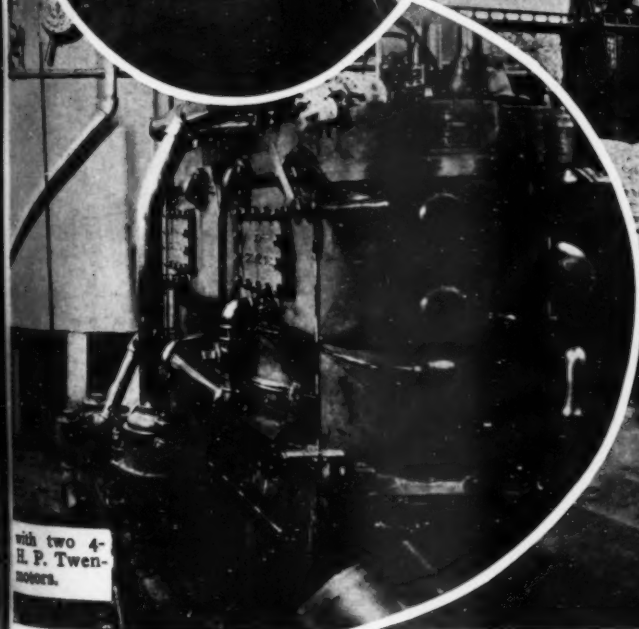
with single berths, bureau and chiffonier. The bathroom is complete in every detail, with porcelain fixtures and open plumbing. The owner's stateroom is aft and contains two double berths, chiffonier and a private toilet.

The deck-house, which is used as dining saloon and in the after portion of which is the galley, is finished in mahogany and contains extension dining table with chairs and chiffonier. The galley contains a Webb perfection range and a Larsen refrigerator.

The Indian carries full equipment in the way of boat and other fittings on deck.



One of several large rooms below decks.



with two 4-
cylinder,
H. P. Twen-
motors.

Motor Yachts.

A Big Well

An Eighteen-Mile 110-Footer with En

Appointed Twin Screw Boat.

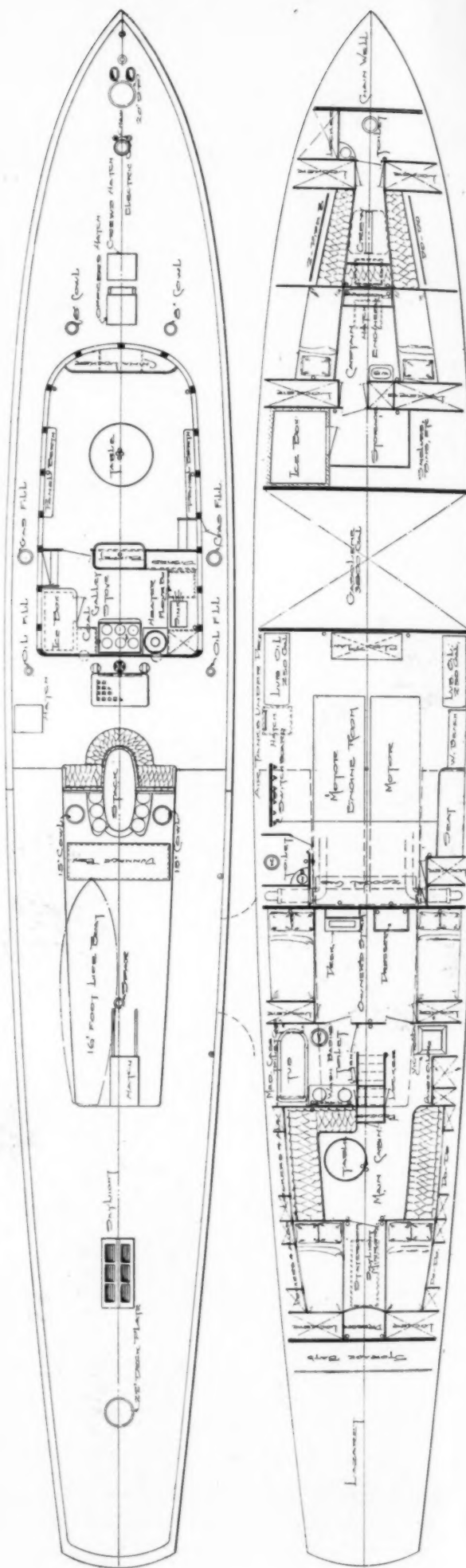
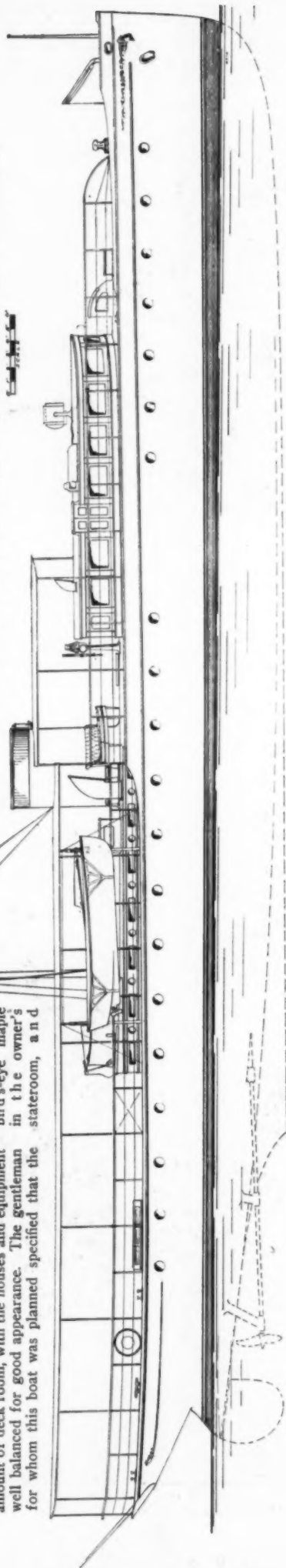
gines Developing 600 H.P. To Be Finished in Mahogany, Walnut and Maple.

ONE of the best boats of the year is the 110-foot motor yacht shown herewith, designed by the Matthews Boat Company, Port Clinton, Ohio. Her beam is 16 feet, and her draft 6 feet, and it will be noted that the boat is low and gives the maximum amount of deck room, with the houses and equipment well balanced for good appearance. The gentleman for whom this boat was planned specified that the

construction be finished in any, and the stateroom, and

the main cabin and owner's room in Circassian walnut. The engine-room is placed amidships where it occupies space totaling to nearly a fifth of the boat's length. The power plant consists of two engines which will develop 600 h.p., and will drive the boat

through the water at a guaranteed speed of 18 miles per hour. The owner's quarters aft were arranged with the owner's stateroom aft of the engine-room. The forward deck-house is given over to the spacious dining saloon and galley.



This big fellow is low with the maximum amount of deck room, and with the houses and equipment well balanced for good appearance.

A92-Foot Motor Yacht of Handsome Appearance.

A GOOD combination of handsome outboard appearance, economical cruising speed and comfortable quarters is shown in this motor yacht designed by William J. Deed, Jr., of Boston, Mass. She is 92 feet overall, 87 feet on the waterline, with a beam of 14 feet, and a draft of only 4 feet 6 inches. She has the sharp, clean-cut lines of the thoroughbred and is a good example of what the large motor yacht can be. The overhanging yacht stern has been retained, while the lines at the waterline have fullness enough to prevent squatting.

While more accommodation could well be had in a boat of her length, the owner simply desired a moderate amount with plenty of elbow room. In the crew's quarters forward there are two extension transoms with pipe berths over, making a berthing capacity for six men. A toilet room with wash basin and linen locker is forward of the forecabin, while in the forepeak beyond a bulkhead is the chain

A Rakish Cruiser Having a Speed of 17 Miles per Hour. Below-Deck Accommodations Only Moderate for Her Length.

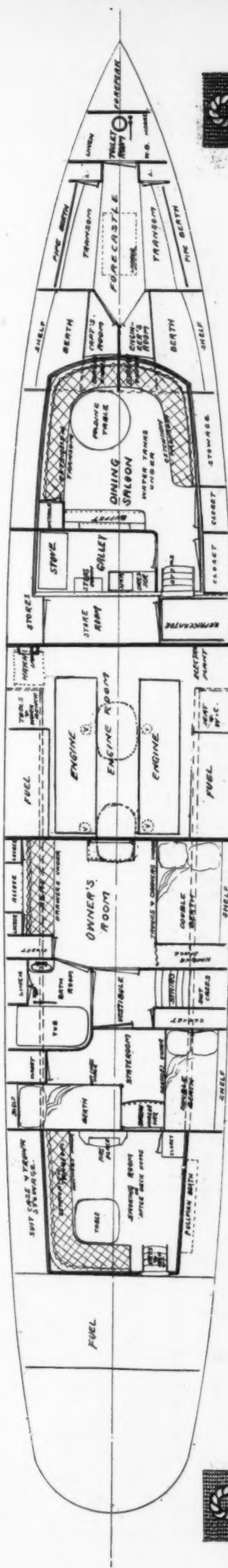
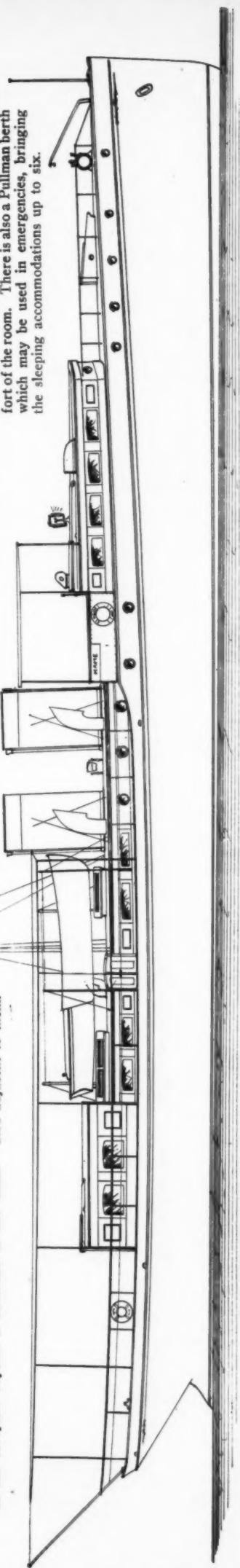
locker. The captain's and engineer's rooms are aft of the forecabin followed by the deck house containing the dining saloon and galley. An extension transom runs around the sides and forward end of the deck house and a circular folding table is placed on the port side forward. A head which separates the partial bulkhead, and a Vicrola occupies the corner on the port side. There are two closets with am- room on the starboard side and the steps up to the deck are situated adjacent to them.

The engine-room is practically amidships and is divided from the rest of the boat by two watertight soundproof bulkheads. It is well lighted by three ports on each side, while the ventilation is taken care of by four air scoops placed in pairs on either side of the funnels. The power plant consists of two 6-cylinder 80 h.p. motors which will drive the boat at a cruising speed of 15 miles, and at 17 miles maximum. There is an independent electric lighting plant on the starboard side forward occupying a corresponding position to the hatchway and ladder on the port side, while there are the usual tool lockers and work bench. The fuel tanks, of which there are two

placed on either side of the engine-room, give the boat a cruising radius of 300 miles.

The owner's stateroom, which is large and commodious, follows the engine-room and is reached from the deck by a companionway on the starboard side and a vestibule off which also open the bathroom and the guest's room. In the owner's room are a double bed on the starboard side, at the foot of which is a clothes press, and a seat with drawers beneath, lockers and closet on the port side. A bureau is centrally placed against the engine-room bulkhead.

The guest's room is aft of the section occupied by the bathroom and vestibule, and it contains sleeping accommodations for three. In the after deck house is the smoking-room, which is perhaps the most attractive apartment on the boat. It is fitted with all the necessities, and a fireplace against a bulkhead forward adds materially to the comfort of the room. There is also a Pullman berth which may be used in emergencies, bringing the sleeping accommodations up to six.



This 92-footer is attractive and is typical of what the modern gasoline engine can do for the yachtsman.

Motor Yachts.

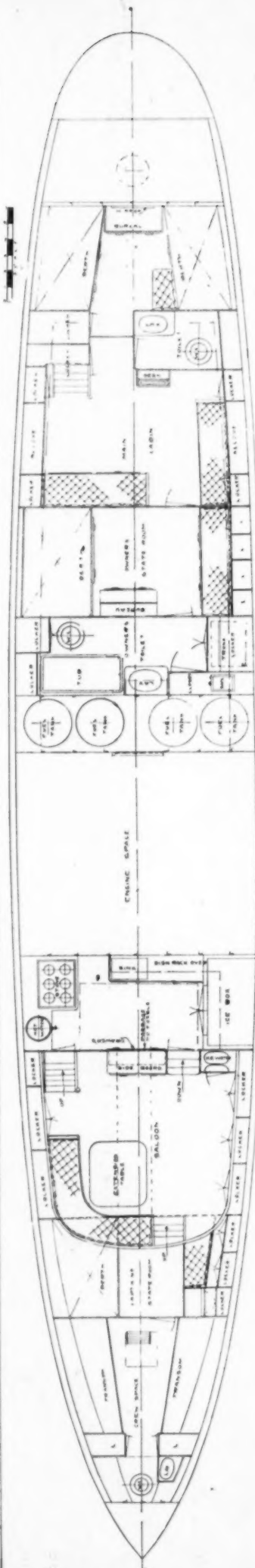
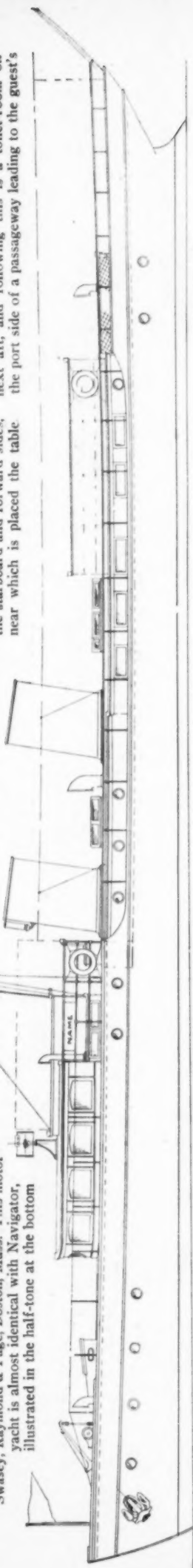
Two Yachts of Similar Construction.

Being a Combination of the Raised Deck and Trunk Cabin Types. Layouts Calling for Exceptional Room Above and Below Decks.

ONE of the very pleasing designs of the year is that of the 98-footer, plans of which are published herewith from the drawing-board of Swasey, Raymond & Page, Boston, Mass. This motor yacht is almost identical with Navigator, illustrated in the half-tone at the bottom

this compartment, and it is the captain's stateroom occupying the full width of the boat. The deck-house forward serves also as the dining saloon, and it is equipped with a transom on the starboard and forward sides, near which is placed the table

The owner's stateroom aft of the engine-room is fitted with double berth on the starboard side, bureau and extension transom. The spacious main cabin is next aft, and following this is a toilet-room on the port side of a passageway leading to the guest's



of this page, which was described in the November, 1912, issue of Motor Boating. The vessel is a combination of the raised-deck and trunk-cabin type with a bridge-deck aft of the forward deck-house. The two stacks give the boat a speedy appearance, and provide space for the installation of the compressed air tank for operating the whistle, the engine exhaust, and small water tank.

Below decks the layout calls for the crew's quarters accommodating four in the forecabin. There is

The two stacks and signal mast set at a rake give her a speedy appearance.



Navigator, described in November, 1912, Motor Boating, is only 90' in length, but her construction is almost identical with that of the 98-footer above.

stateroom. This room is furnished with two double berths, bureau, etc.

The engine compartment occupies the space practically amidships. Here two engines will be installed, and there will also be found room for the electric lighting plant and the other equipment usually provided for this compartment. Behind another bulkhead at the after end will be four cylindrical gasoline tanks, also separated by a steel bulkhead from the owner's private bathroom next aft.

A New Type of Cruising

In Which All the Sea-Going Qualities of an Off-Shore Cruiser and the Limited Beam for Passage Through the Erie Canal.

THE plans which are published herewith show a new type of cruising motor boat that will appeal very strongly to yachtsmen who have had actual experience with the modern type of motor cruiser.

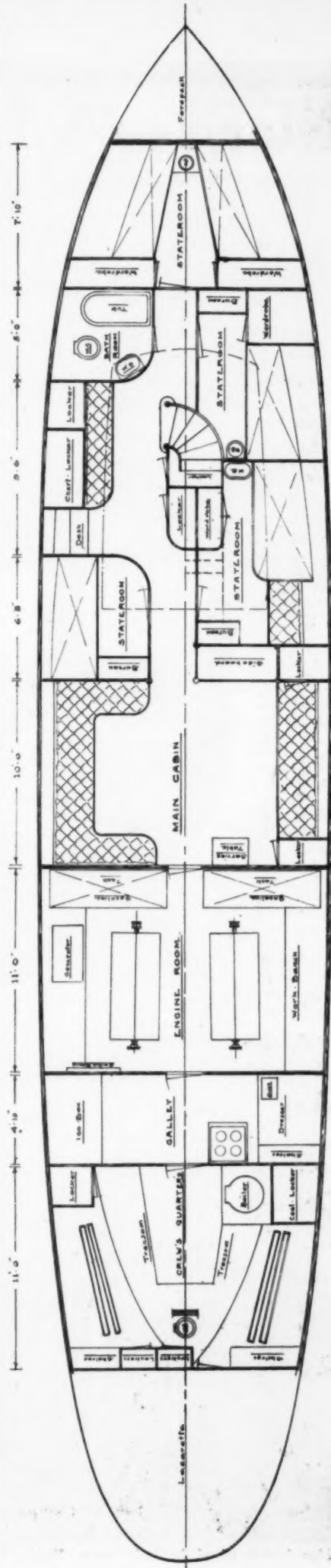
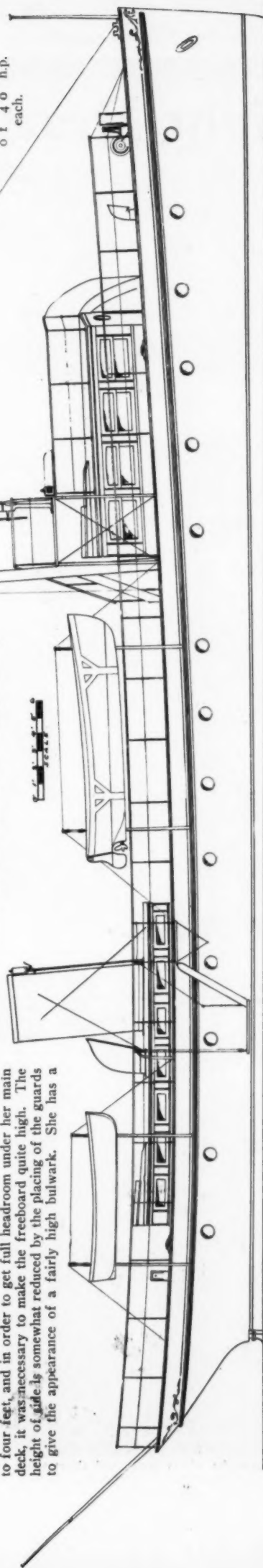
In designing this boat, Messrs. Bowes & Mower, of Philadelphia, have combined the seagoing qualities of an offshore cruiser with the comfort and accommodations of a houseboat, and, at the same time, have kept the draft down so that the boat can be used for cruising and shooting in southern waters.

The length was limited by the owner to 84 feet, and the extreme breadth over the guards was made 17 feet and 4 inches, so that she can go through the Erie Canal. The draft is limited to four feet, and in order to get full headroom under her main deck, it was necessary to make the freeboard quite high. The height of side is somewhat reduced by the placing of the guards to give the appearance of a fairly high bulwark. She has a

Motor Yacht.

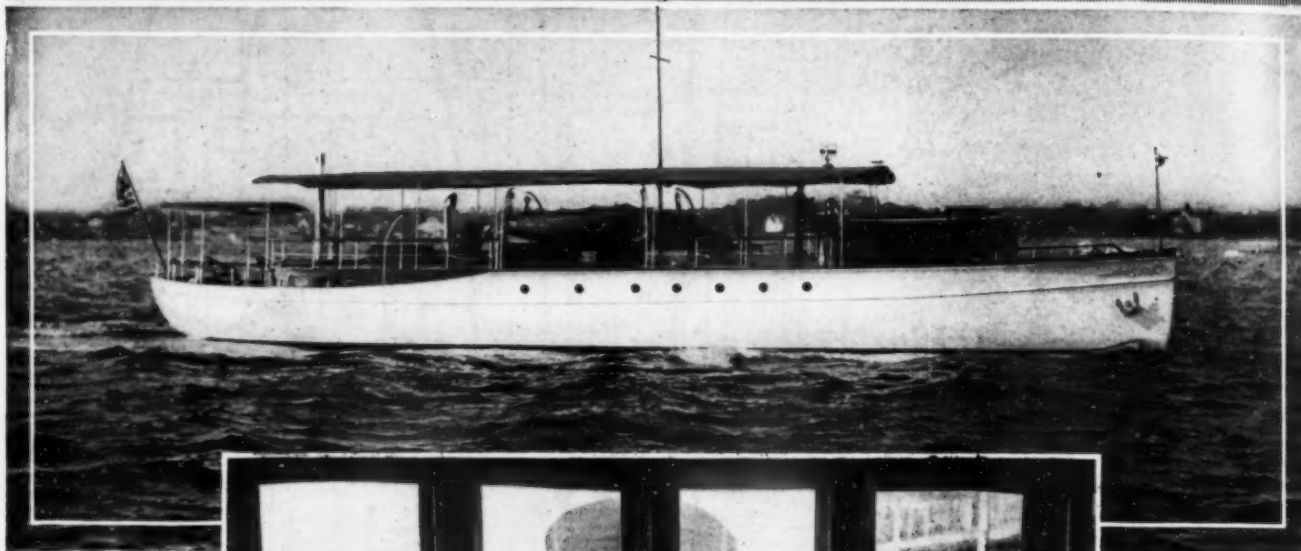
Comfort of a Houseboat Are Combined. Canal.

The forward stateroom has two berths with clothes lockers at the aft end, and a wash basin at the forward end. Under the berths are two large drawers. The bathroom opens from the passageway and is equipped with the usual fixtures. The engine-room is directly aft of the main cabin, and is 11 feet long. The main power plant consists of two Murray & Trengurtha 4-cylinder, 40 h.p. each.



With a draft limited to four feet it was necessary to make the freeboard rather high in order to give full headroom under the main deck, but the height of side is somewhat reduced by the placing of the guards to give the appearance of a fairly high bulwark.

Maris--A Light Draft Cruiser.



Maris is a 77-footer for cruising in

THE accompanying photographs show the motor yacht Maris, designed and built by the New York Yacht, Launch and Engine Company, of Morris Heights, N. Y., for Mr. W. H. Cole, of Duluth, Minn. Maris is 77 feet 6 inches in length, and has a beam of 16 feet 6 inches. She is an exceptionally fine cruiser for southern waters, as she has a large, roomy deck, and only 3 feet 6 inches draft.

The accommodations for the owner and crew are very commodious and handsomely

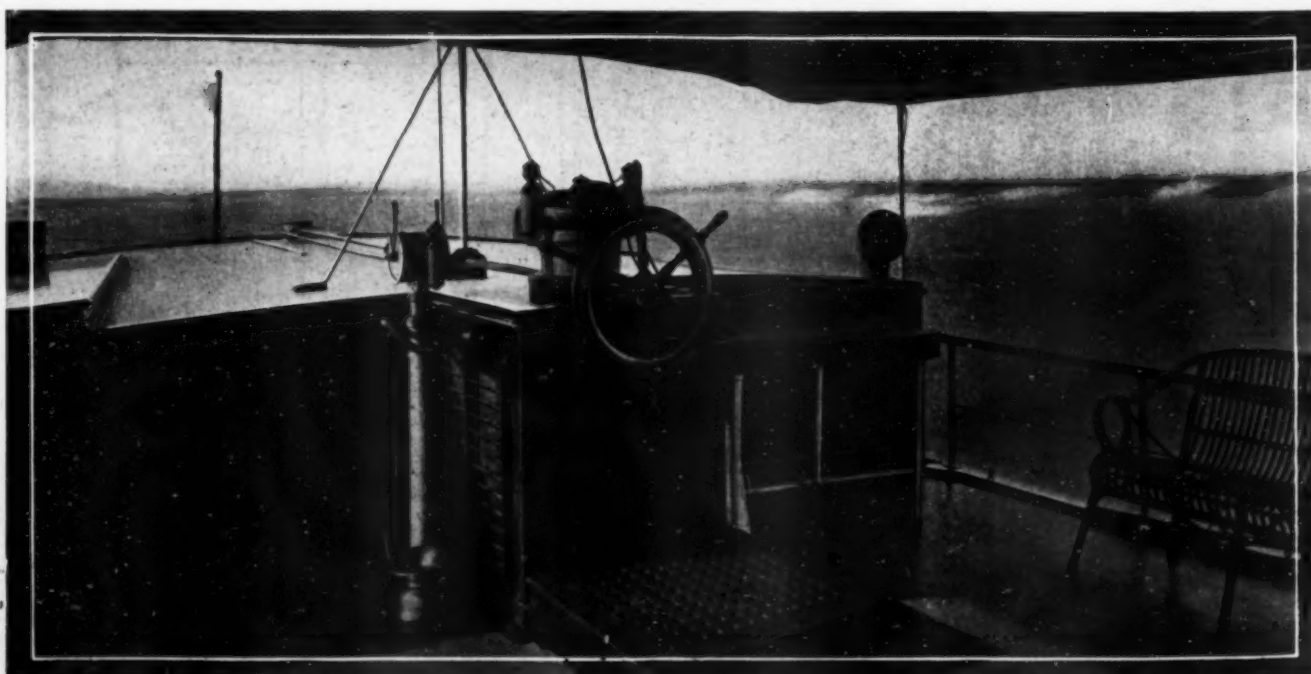


Her deck house is large and roomy inside.

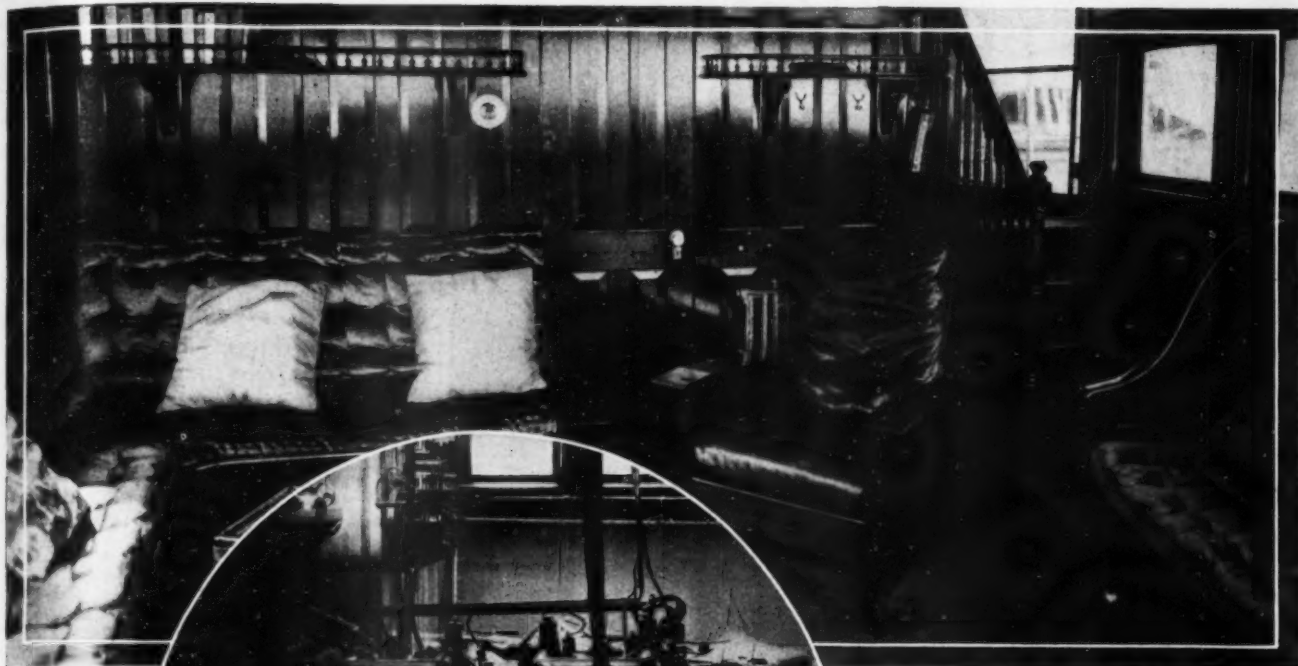
with roomy decks Southern waters.

appointed. The deck-house, which is low, is large and roomy inside, and makes a comfortable living-room. There are wide, deeply upholstered transoms on each side, and the chairs are deep and comfortable. A row of lockers across the forward end will provide stowage place for books and magazines, and odds and ends of all kinds.

Aft of the deck-house below are the owner's quarters, laid out with the owner's stateroom with large double berth, bureau, clothes locker,



The bridge deck is aft of the deck house. Engine telegraphs, chart cases and chart table are all within reach of the helmsman.

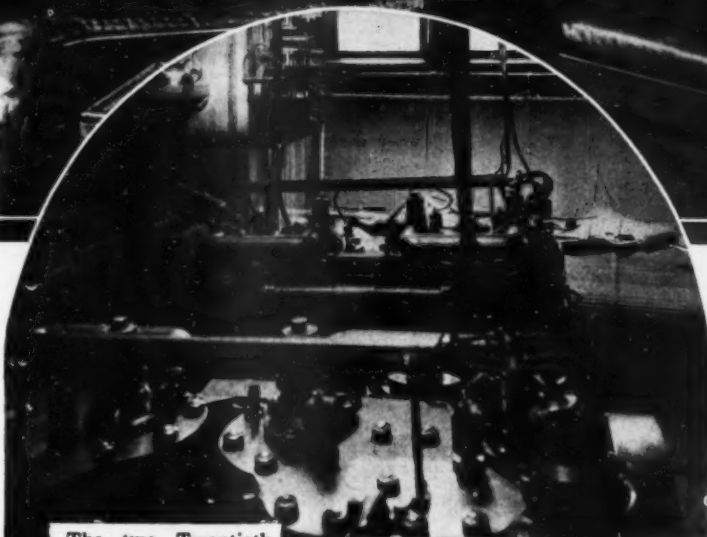


The main cabin is commodious and handsomely appointed.

and private toilet attached on the starboard side. On the port side, opposite the owner's stateroom, are two private staterooms, each having two single berths with bureau and clothes lockers. The bathroom is aft of the owner's stateroom on the starboard side.

The dining saloon extends the full width of the boat about amidships, and is very large and roomy. It is equipped with buffet, linen locker, and the usual saloon furnishings.

At the after end of the dining saloon is located a steel bulkhead, and aft of the bulkhead is the engine-room, in which are the two 45 h.p. Twentieth Century motors with which the boat is powered. On the

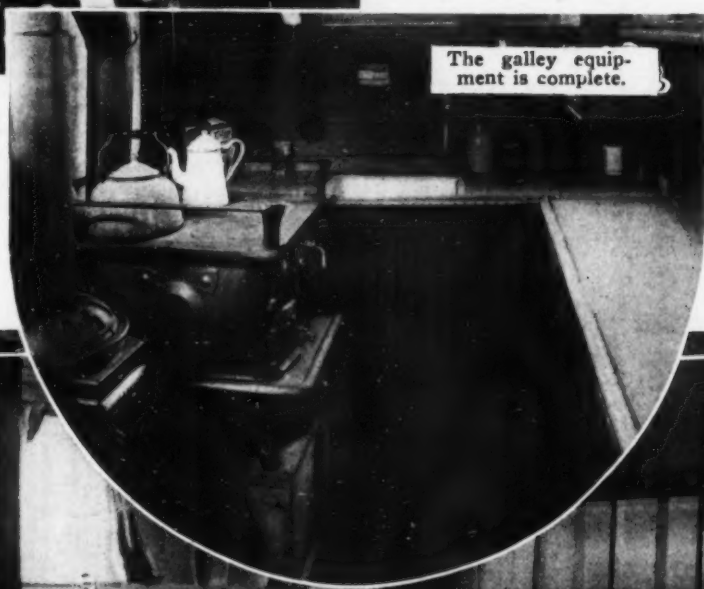


The two Twentieth Century motors.

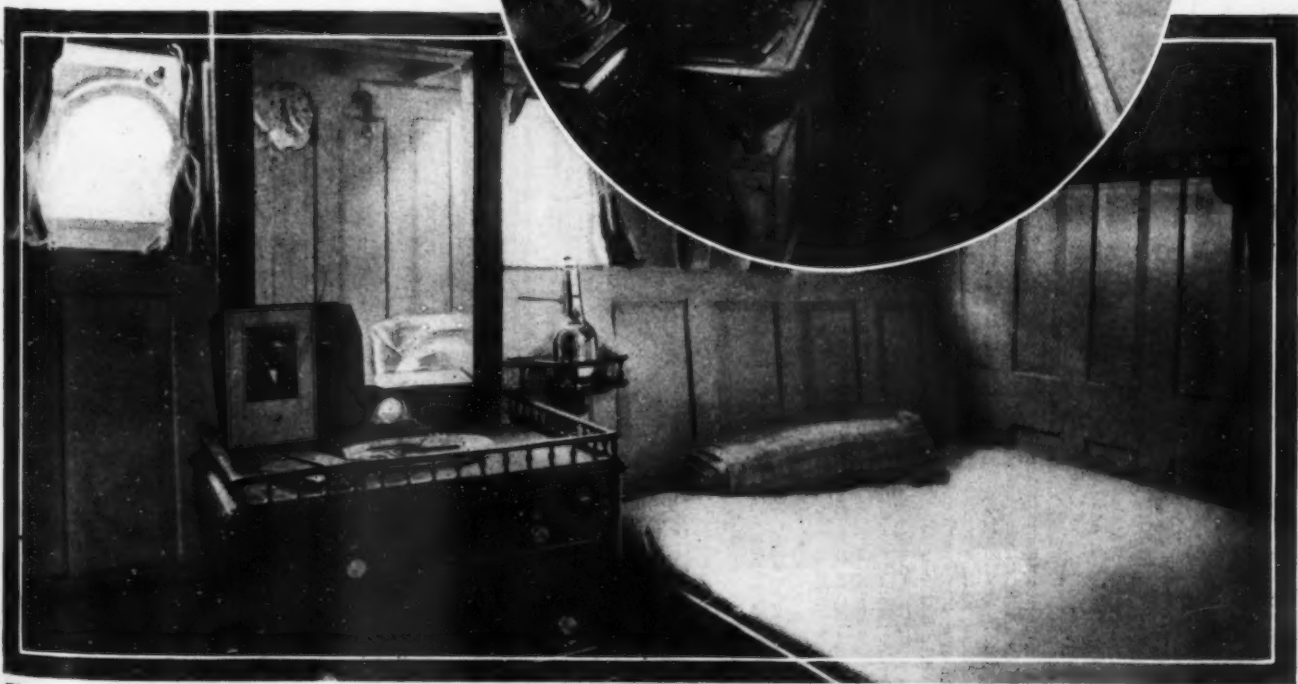
port side of the engine-room is a pipe berth for the engineer, and the other equipment of the room includes lighting plant, switchboard, work bench, tool lockers, etc.

The boat is steered from the bridge deck aft of the deck-house, and engine telegraphs, chart cases and chart table are all handy to the helmsman. The bridge deck is covered by an awning which also extends aft the length of

the vessel to the after deck, this latter being covered by a separate and lowering of pleasing appearance.



The galley equipment is complete.



The owner's stateroom on the starboard side is provided with double berth, bureau and clothes lockers. A private toilet is attached.

An 80-Footer with Safety Built In.

PROMINENT among the new boats being built for the coming season is the 80-foot twin-screw cruiser for Mr. Henry Schwarzwald, of New York City, which is now well under way at the yard of her designers, the Luders Marine Construction Company, of Stamford, Conn. This boat, which has a waterline length of 72 feet 6 inches, and a beam of 14 feet, follows very closely the type that has been particularly developed by this concern—a plumb bow of pleasing flare, a generous freeboard, and a whaleboat stern—a type well exemplified by the well-known 60-footer Kathmar II. The construction of the new boat is to be strong, and yet free from cumbersome material. Native Connecticut white oak is to be used in the frame work, stem, keel, stern frames, etc., and the planking is Georgia long leaf yellow pine, the finest procurable. The cabin work and all outside trimming is to be of mahogany, while the decks will be of Michigan cork pine.

The motor power of this craft will consist of two 50 h.p. Sterling engines set in an engine-room that is

Having Fireproof Galley and Double Exits from Every Compartment. White Oak and Yellow Pine Construction and Mahogany Trim.

partitioned off from the rest of the boat by two steel bulkheads. These motors will drive the boat at a speed of 13 statute miles per hour, and the two large gasoline tanks also set between bulkheads aft of the engine-room will have a gasoline capacity sufficient for about 700 miles at an economical cruising speed.

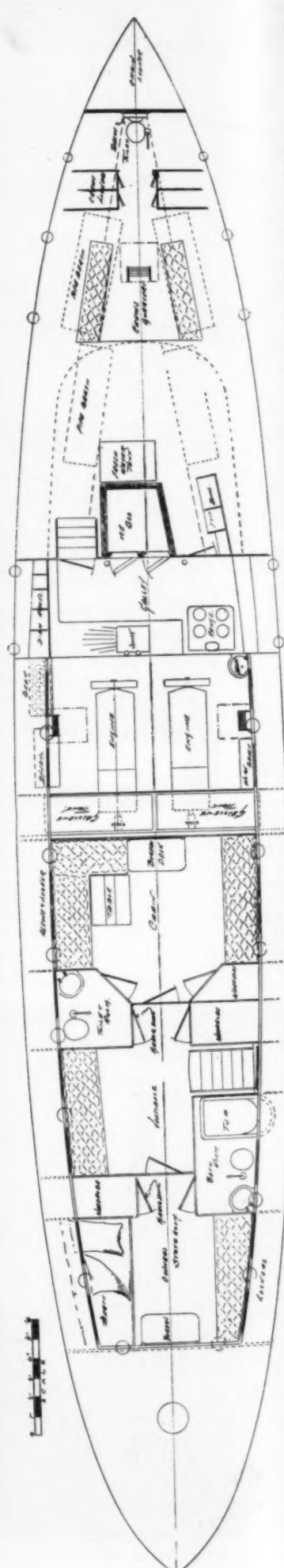
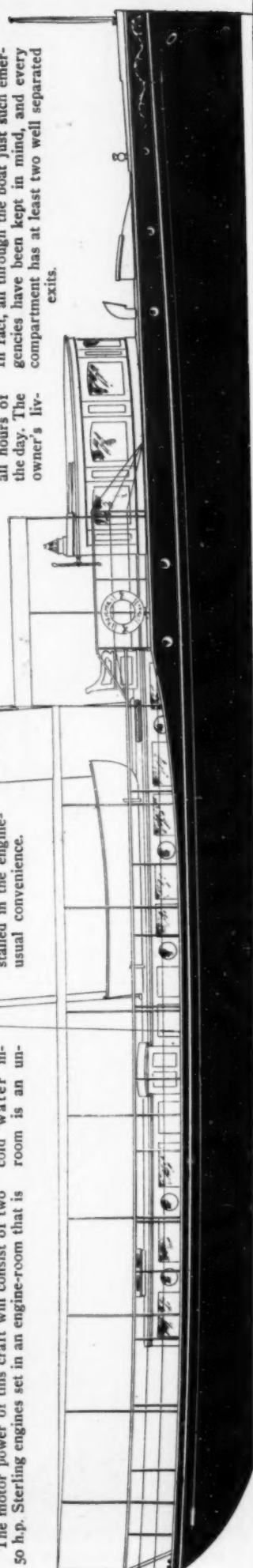
An unusually large independent electric generating set located in this compartment on the port side will give sufficient current for complete decoration and, of course, will be charge the storage system with hot and cold water installed in the engine-room is an unusual convenience.

A large galley, extending the full width of the vessel, is located forward of the engine-room, and, as a safety precaution, is entirely sheathed with metal, floor, ceilings and all. A stairway up on the port side leads to the dining saloon, and on the starboard side is a door opening into a passageway by which the crew's quarters are connected with the galley.

The dining-room is finished entirely in selected figured African mahogany, and is provided with an ample sideboard of Sheraton design, with chairs and table of the same period to match. This room is particularly light and airy, and will be a favorite lounging place at all hours of the day. The owner's living

quarters are aft, entered from a side companionway which terminates in a large lobby or vestibule of mahogany, and furnished with an inviting settee. From this capacious room is reached the owner's stateroom, which occupies the extreme after end of the boat. This room is furnished with double bed, bureau, wardrobe, etc., and a pleasing feature is the large mirror set into the wardrobe door. The room is connected with a bathroom, reached through a door on the starboard side, symmetrically opposed to the wardrobe door.

Comfort at all seasons of the yachting year is assured by a hot water heating system with the heater located in the galley. Safety, also, has been carefully considered, and, with this end in view, two folding ladders are provided, so that, in the event of any accident, escape may readily be made from either of the two after skylights, should the main companionway for any reason be unavailable. In fact, all through the boat just such emergency exits have been kept in mind, and every compartment has at least two well separated exits.



With her single stack, signal mast, and long low khaki awnings, this 80-footer should make a pleasing addition to the Stamford Yacht Club in which she is enrolled.

An 80-Foot Cruiser for the Season of 1914.

THIS comfortable cruiser, designed by J. Murray Watts, of Philadelphia, Pa., will be built this winter for use on the Chesapeake and in Florida. She will be very similar to Howarda, a 73-foot cruiser, designed this year for Mr. Howard S. Kerner, although her extra length of seven feet gives opportunity for carrying a good-sized deckhouse forward and a separate stateroom for the captain, which Howarda did not have. The deckhouse will be fitted as a chart house, and a steering-wheel will be fitted at the forward end, so that in bad weather the boat can be steered from this position rather than from the bridge.

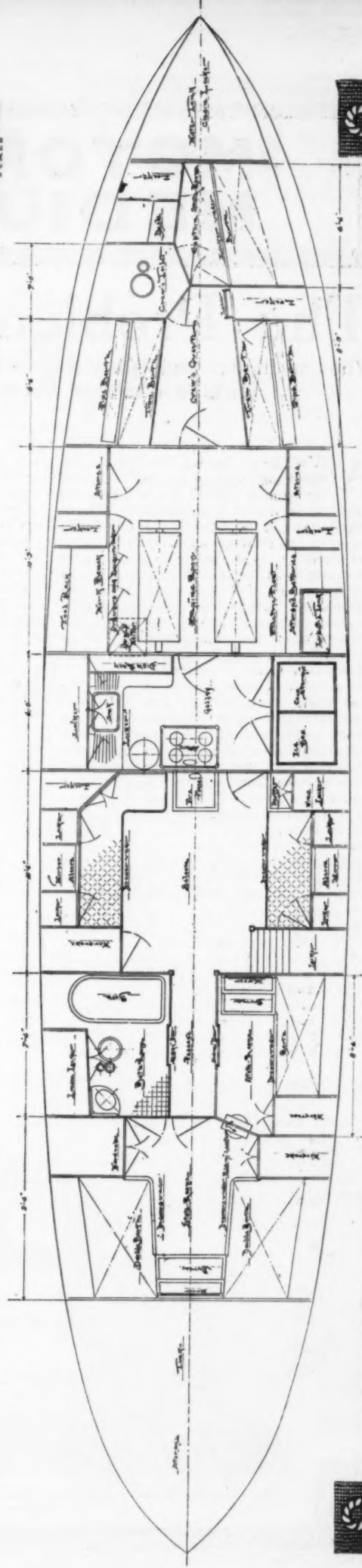
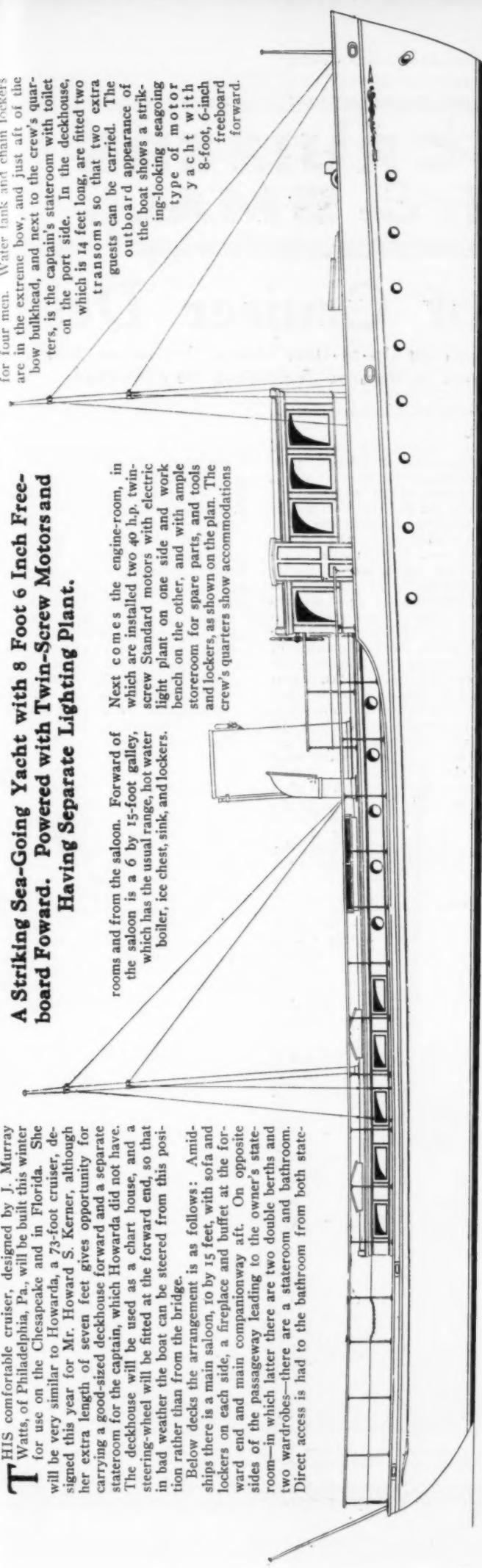
Below decks the arrangement is as follows: Amidships there is a main saloon, 10 by 15 feet, with sofa and lockers on each side, a fireplace and buffet at the forward end and main companionway aft. On opposite sides of the passageway leading to the owner's stateroom—in which latter there are two double berths and two wardrobes—there are a stateroom and bathroom. Direct access is had to the bathroom from both state-

A Striking Sea-Going Yacht with 8 Foot 6 Inch Freeboard Forward. Powered with Twin-Screw Motors and Having Separate Lighting Plant.

rooms and from the saloon. Forward of the saloon is a 6 by 15-foot galley, which has the usual range, hot water boiler, ice chest, sink, and lockers.

Next comes the engine-room, in which are installed two 40 h.p. twin-screw Standard motors with electric light plant on one side and work bench on the other, and with ample storeroom for spare parts, and tools and lockers, as shown on the plan. The crew's quarters show accommodations

for four men. Water tank and chain lockers are in the extreme bow, and just aft of the bow bulkhead, and next to the crew's quarters, is the captain's stateroom with toilet on the port side. In the deckhouse, which is 14 feet long, are fitted two transoms so that two extra guests can be carried. The outboard appearance of the boat shows a striking-looking seagoing type of motor yacht with 8-foot, 6-inch freeboard forward.



This 80-footer, which will be put in commission in the spring for use on the Chesapeake and in Florida waters, is finished in teak outside and in white enamel trimmed with mahogany inside in the owner's quarters.

MOTOR CRUISERS MEDIUM & SMALL

The Problem of Cruiser Design.

What to Expect and What Not to Expect in an Up-to-Date Motor Cruiser of Medium Size.
Striking a Balance Between What is Wanted and What May Be Had.

By Morris M. Whitaker.

A CRUISER is a floating home, and, while combining as many of the features of the home as possible, it has to have the additional feature of being able to move from place to place at more or less speed, and with greater or less comfort and safety to its owner and occupants. It also has to do what no self-respecting home has to—that is, supply its own public utilities. If it is of generous size, the compromises necessary to reconcile widely divergent requirements are not so severe, but when the size is cut down some things must be sacrificed or the whole design is thrown out of balance and becomes a jumble of misfits.

In general, all owners want pretty much the same things irrespective of size, but sometimes they give undue prominence to some feature, and, as a result, have to sacrifice somewhere else, for, unfortunately, two things cannot occupy the same place at the same time. When accommodations for more than the usual number for a given size are demanded, or when the conventional arrangement is upset, the result is usually failure to attain the desired object, with the result that the owner is thoroughly dissatisfied with his own ideas when they are worked into the boat.

If abnormal speed is required, everything must play second fiddle to the motor and fuel tanks, and the accommodations must take what is left. Again, a given feature may be thoroughly practical and desirable in a large cruiser and useless and detrimental in a small one.

The qualities or combinations of them that every owner wants are in general importance: First, seaworthiness, the ability to go to sea or to stay at sea when caught out in a blow without danger of loss or wreck,

and for such a condition the boat should be so designed as to avoid shipping green water or rolling excessively; in other words, to be easy in a seaway. If this quality is present in the form of the hull, the boat will be comfortable if properly arranged; that is, if her quarters are worked out to take the best advantage of her form. Next in order in importance is speed for power, and this quality directly follows the quality of seaworthiness due to form, except in boats that are overpowered for their size. These may be seaworthy in the sense of being safe, but they are seldom comfortable, for, due to excess of power, with its attending complications, comfort must be sacrificed to speed. Next, in general consideration, is appearance, and this is a matter of taste and education from the standpoint of both architect and owner. The well balanced design essential qualities and its due weight, boat is successful an owner insists feature undue sign is thrown out misses success by amount that has set his against perience architect builder. A well footer cannot expected to do sixty would, equal a one it is often a

good forty is a better all-around boat than a poor sixty. It would be reasonable to expect full headroom in a sixty, but unreasonable in a thirty, for the larger boat is naturally deeper and draws more water. In a thirty, however, the proper depth of hull is too small to give full headroom without either giving her abnormal draft or freeboard. Either of these expedients militates against the other qualities of a well balanced design of this size; too much draft makes a small boat loggy and too much freeboard makes her top-heavy. So, too, a sunken deck house while feasible on a seventy-five or eighty becomes an excrescence and a detrimental top weight on a smaller boat. If the boat is one hundred or over, a deck house with full headroom is no disadvantage and a great convenience.

In the matter of speed, length is a factor that seldom gets proper consideration. What would be a reasonable speed in a seventy-five can only be obtained in a thirty by fitting abnormal power with its attending complications; such, for instance, as giving the best part of the boat to the motor and putting in big (for the boat) fuel tanks, or cutting scantlings and weights till the boat becomes only a shell and really unfit to be termed a cruiser.

There are many other incongruities which any one making a profession of designing meets in the course of business, but the hardest idea to eradicate is that you cannot get forty feet of accommodation in a forty-footer. You must allow for ends; you must start and finish. Another almost as hard is that a boat is not as wide on her cabin floor as on deck unless she is built straight sided like a canal boat.



Elharanjo, designed by Morris M. Whitaker for A. G. and E. G. Griesse, of Cleveland, Ohio., a 45-ft. cruiser powered with Buffalo heavy duty engine.

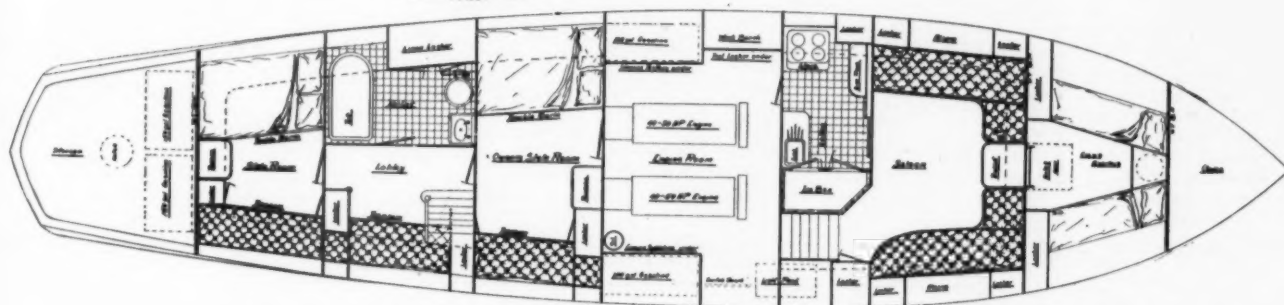
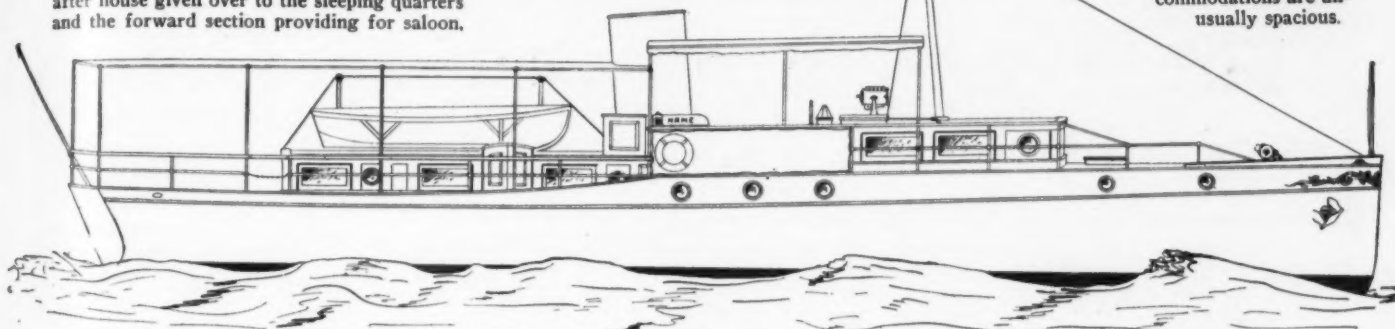
Medium Size Cruisers.

A Bridge-Deck 67- Footer.

THE accompanying plans are those of a comfortable 67 by 15-foot cruiser designed by the Niagara Motor Boat Co., of North Tonawanda, N. Y. The design adheres to the bridge deck type with the large after house given over to the sleeping quarters and the forward section providing for saloon,

crew's quarters, etc. Living quarters consist of two large staterooms with bath between, located under the after trunk house. The engine room is especially commodious, having a headroom of seven feet

throughout, and extending the full width of the hull. The forward house is given over to saloon and galley. Owing to the rather excessive width of the hull, the deck accommodations are unusually spacious.



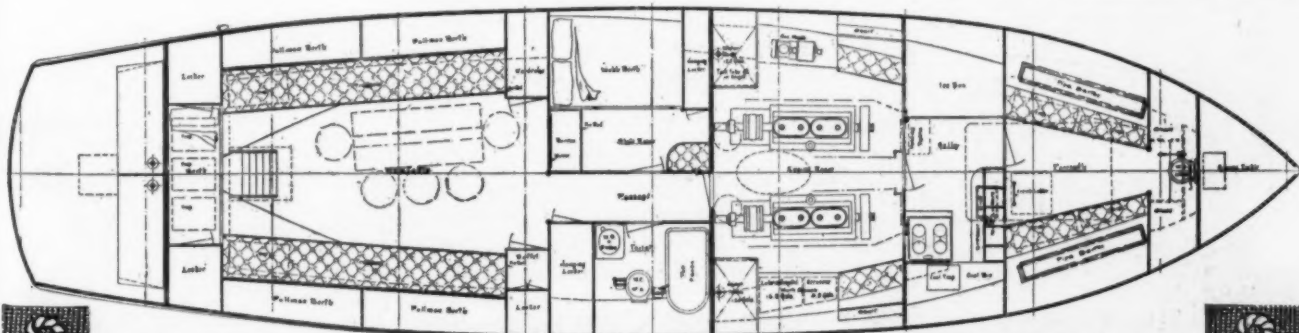
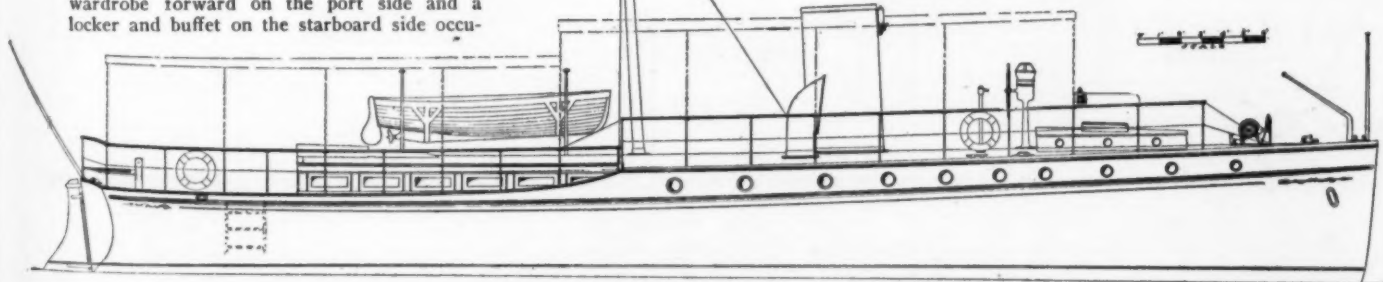
The engine-room having a headroom of seven feet throughout occupies the amidships section.

A Well Arranged 60-Footer Cruiser.

A WELL ARRANGED cruiser is that shown herewith designed by Bowes & Mower, of Philadelphia. As laid out the owner's quarters are placed aft, with the engine-room and crew's quarters forward. The main cabin is reached through a companionway at the rear of the deck house, facing aft. Transoms are set on either side of the cabin with pullman berths over. There is a wardrobe forward on the port side and a locker and buffet on the starboard side occu-

pying space opposite the wardrobe. The dining-table is placed near one of the transoms doing away with the necessity of placing chairs on one side. On the port side of a passageway which runs

the length of the boat, being broken by doors into the engine-room, etc., is the owner's stateroom having double berth, bureau, and locker. Opposite it is a bathroom with full equipment. In the engine room forward, space is found for auxiliary engine, water, kerosene and lubricating oil tanks, and two transoms, besides the two engines of the main power plant.



The design of this cruiser calls for an interior inter-connected from bow to stern. The engine room, galley and crew's quarters are all forward of the owner's apartments.

Medium Size Cruisers.

A Deep-Sea Cruiser.

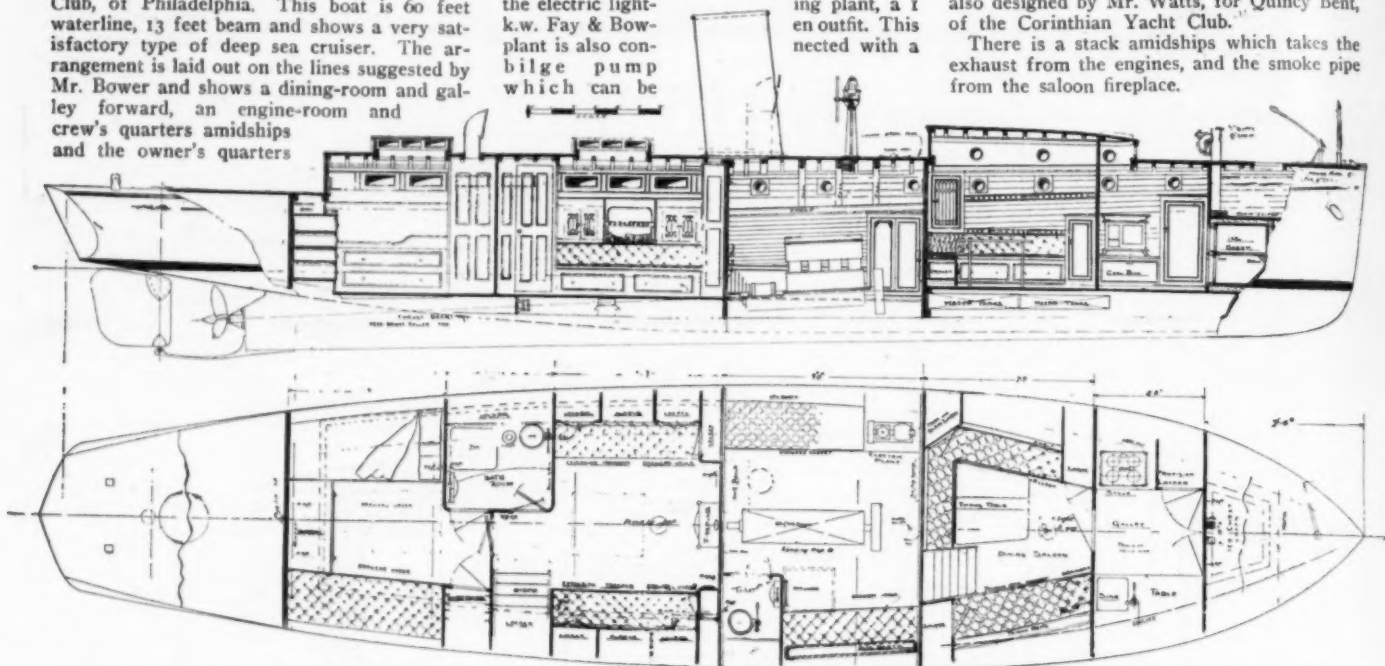
THE following plans show a seagoing cruiser designed by J. Murray Watts, for Mr. F. B. Bower, of the Corinthian Yacht Club, of Philadelphia. This boat is 60 feet waterline, 13 feet beam and shows a very satisfactory type of deep sea cruiser. The arrangement is laid out on the lines suggested by Mr. Bower and shows a dining-room and galley forward, an engine-room and crew's quarters amidships and the owner's quarters

aft consisting of two large apartments, with the bathroom placed between them. The main engine is a heavy duty 37 h.p. Standard, and the electric light-k.w. Fay & Bow-plant is also con-bilge pump which can be

thrown in and out of gear through a clutch.

The general outboard appearance of the boat is very similar to the well known 'Lebanon', also designed by Mr. Watts, for Quincy Bent, of the Corinthian Yacht Club.

There is a stack amidships which takes the exhaust from the engines, and the smoke pipe from the saloon fireplace.



A cruiser in which the accommodations for the men are confined to the engine-room, leaving the other parts of the boat to the uses of the owner.

An Interesting 60-Footer.

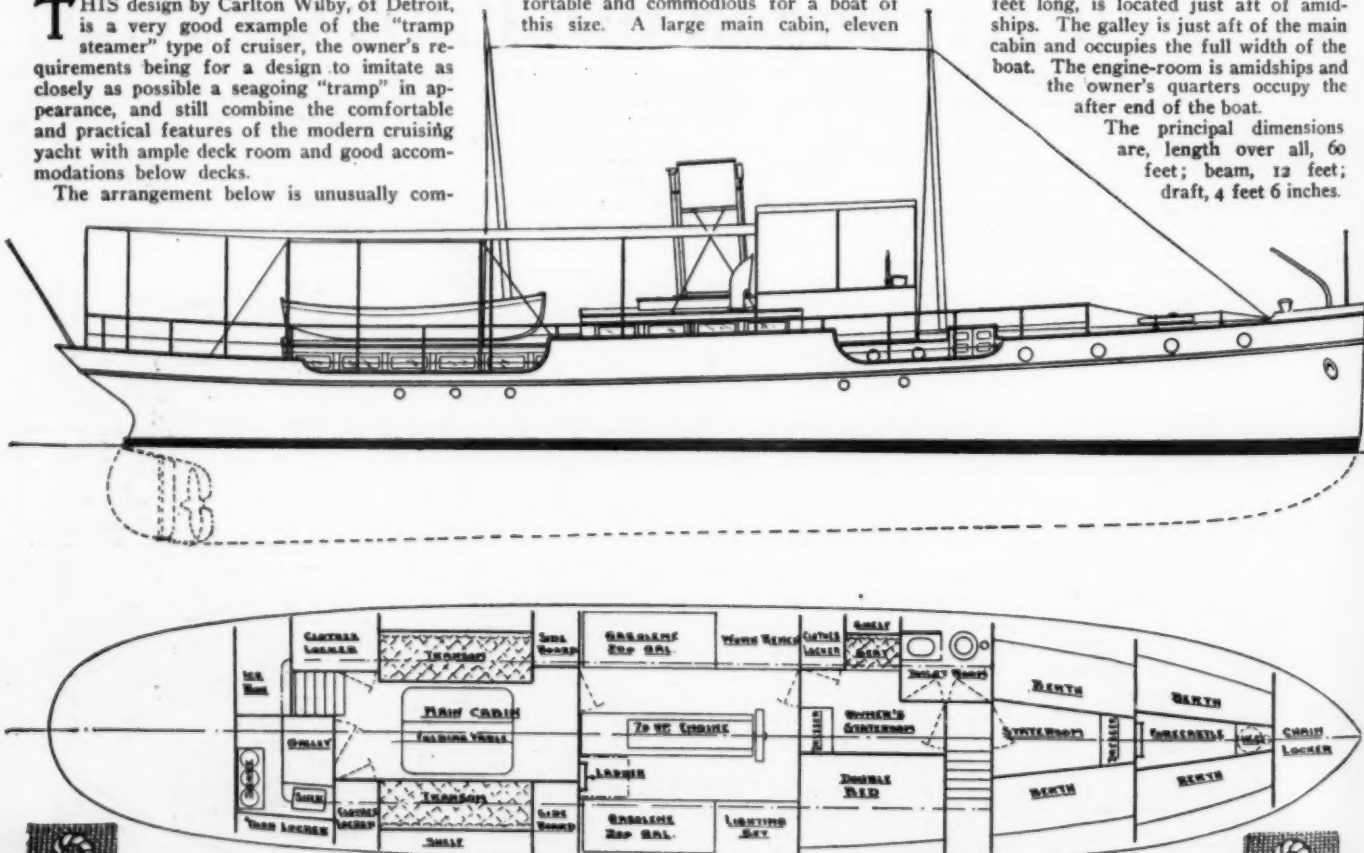
THIS design by Carlton Wilby, of Detroit, is a very good example of the "tramp steamer" type of cruiser, the owner's requirements being for a design to imitate as closely as possible a seagoing "tramp" in appearance, and still combine the comfortable and practical features of the modern cruising yacht with ample deck room and good accommodations below decks.

The arrangement below is unusually com-

fortable and commodious for a boat of this size. A large main cabin, eleven

feet long, is located just aft of amidships. The galley is just aft of the main cabin and occupies the full width of the boat. The engine-room is amidships and the owner's quarters occupy the after end of the boat.

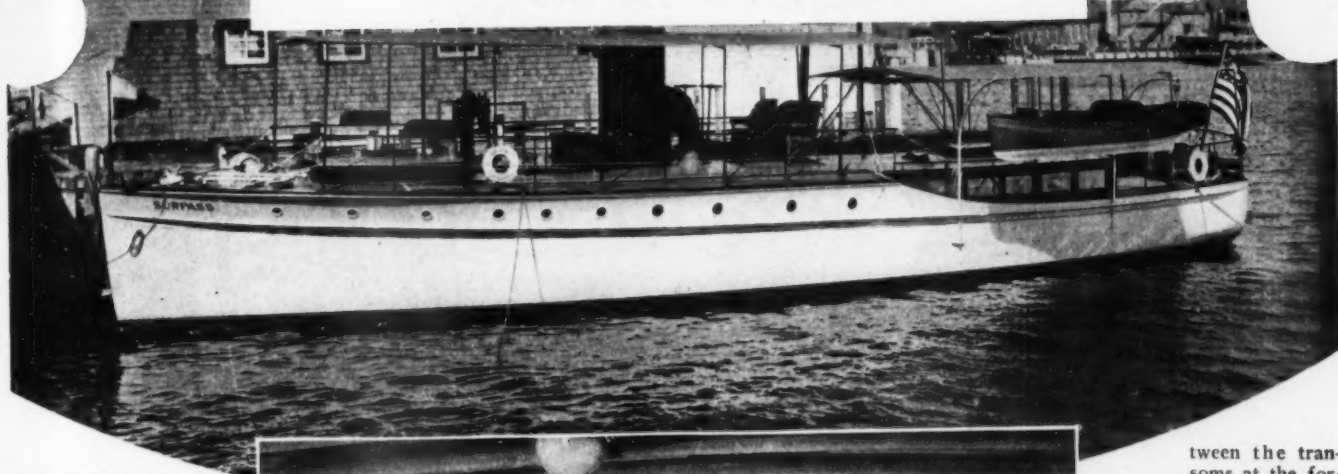
The principal dimensions are, length over all, 60 feet; beam, 12 feet; draft, 4 feet 6 inches.



This cruiser imitates as closely as possible the lines of a tramp steamer, but combines all the comforts and practical features of the modern yacht possible in a boat of this size.

SURPASS.

A 60-Footer with Plenty of Room.



DESIGNED for John P. Mathieu, Esq., of Philadelphia, by Bowes & Mower, and built by the South Jersey Yacht Building Company, of Atlantic City, N. J., this 60' 6" x 15' 4" boat is a type of modern raised-deck cruiser that will make an appeal to many yachtsmen on account of her unusual beam and her large accommodations below deck. The tendency in the majority of the modern boats is to cut them up below deck, so as to give the greatest possible number of small cabins and staterooms, which, in actual results, too often makes the boat cramped and lacking in elbow room. Surpass is the exact opposite of this type, as she has a main cabin 18 feet long with nearly 8 feet of clear floor space be-



Her main cabin is exceptionally large.

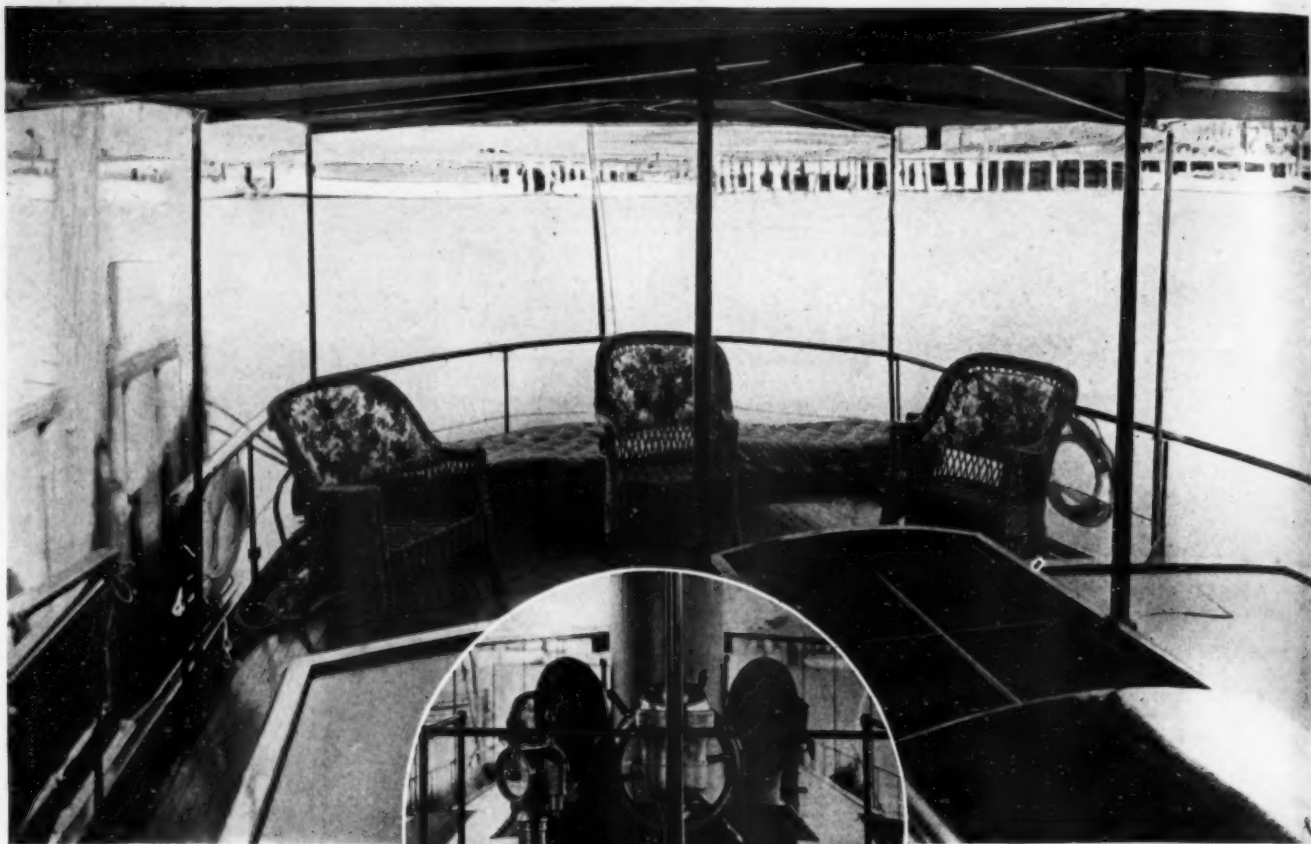
tween the transoms at the forward end of the cabin. There are four Pullman berths in the main cabin, which fold up under the side decks and form the panel work of the cabin when they are not in use. At the after end there is a permanent berth athwartships with a clothes locker at either end.

The owner's stateroom is on the port side, opening from a passageway, and contains a wide double berth with two large drawers and a locker under it. Opposite the owner's stateroom is a large toilet-room with full equipment.

The boat is used for short cruises and fishing trips, and, as the owner's guests are always men, the folding berths in the main cabin give all the accommodations necessary, and the arrangement could not



The two 4-cylinder, 37 H. P. Standards exhaust into the stack.



be improved upon for the purposes intended.

The engine-room is amidships just forward of the owner's stateroom and separated from the owner's quarters by a double watertight bulkhead. Her power plant consists of two 4-cylinder 6" x 8" Standard engines, developing 37 h.p. each. The engines will exhaust in the stack, which

Above decks, too, there is plenty of elbow room.

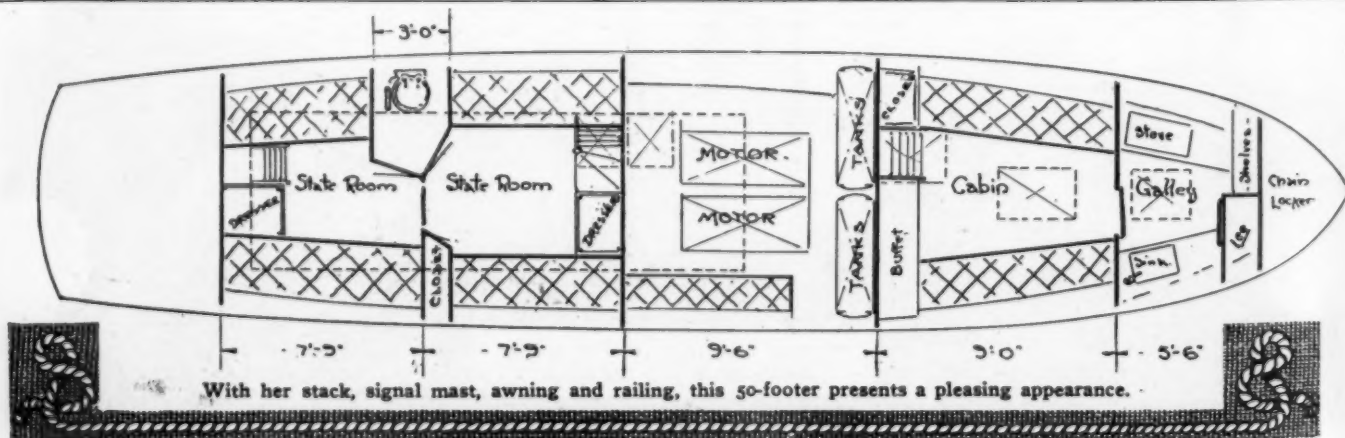
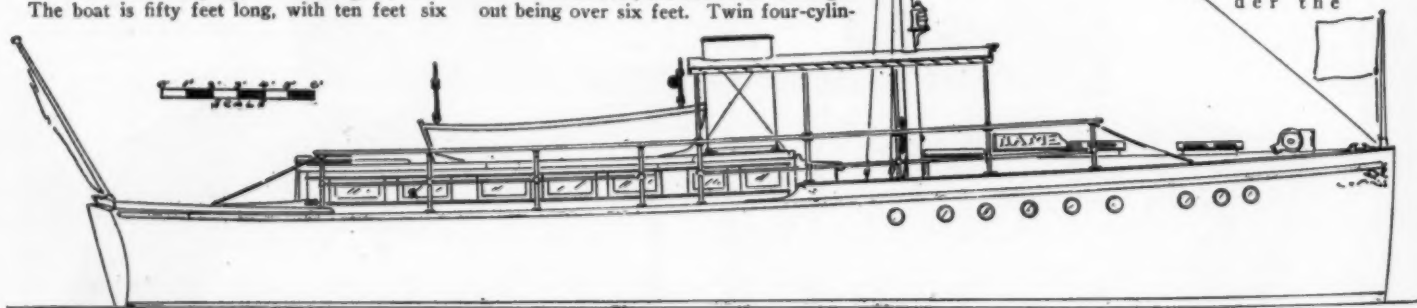
also provides engine-room ventilation. The gasoline tanks are located aft in the lazarette, and have a capacity of 385 gallons, which will give a cruising radius of six hundred miles. The boat has a speed of slightly over twelve statute miles per hour.

A Pleasing 50-Ft. Cruiser.

THE plans of the 50-foot cruiser shown are from the drawing office of the Atkin-Wheeler Company, of Huntington, L. I. The boat is fifty feet long, with ten feet six

inches beam, and a draft of three feet six inches. The freeboard forward is six feet, and aft four feet, the headroom throughout being over six feet. Twin four-cylin-

der motors of 70 h.p. each are located amidships under the



With her stack, signal mast, awning and railing, this 50-footer presents a pleasing appearance.

Medium Size Cruisers.

bridge deck and part of the after house. They are designed to give the boat a speed in excess of 16 miles per hour. There is a watertight bulkhead both forward and aft of the engine-room, and within this space are located two gasoline tanks, oil tanks, lighting plant, work bench, transom, etc.

The main cabin is under the raised deck forward, and is nine feet long by the width of the boat. It is furnished with seats, buffet, closet, etc. Forward of the main cabin is the galley, also the width of the boat by five feet six inches long. It is equipped with stove, ice chest, sink and dish lockers. The forepeak is used as a locker for the chains.

Two double staterooms are in the after house, being connected as shown, and each having access to the toilet-room on the port side. They are equipped with dressers, chairs, etc., and access is obtained to these two rooms, either from the bridge deck, or from the after deck.

Arbutus II, a Raised Deck Cruiser.

THE accompanying photographs illustrate the 50-footer Arbutus II, which was delivered to Mr. E. F. Cooley, of Lansing, Mich., in July. The general type and layout of the boat is somewhat similar to Chatana, also built by the Matthews Boat Company, of Port Clinton, Ohio, for Mr. J. G. Heaslet, of the Studebaker Corporation, Detroit, Mich., inasmuch as it is of the raised-deck type forward, with trunk house aft. The interior layout, however, is modified considerably. On Arbutus II, a great deal of attention has been given to the large amount of locker space and the hundred little details that come through experience in handling boats of this size.

The layout provides for the toilet having flushing closet and lavatory installed, just aft of the chain locker. A full-height wardrobe is arranged at the forward end of the toilet-room. Between this compartment and the main cabin are two full-height wardrobes, with

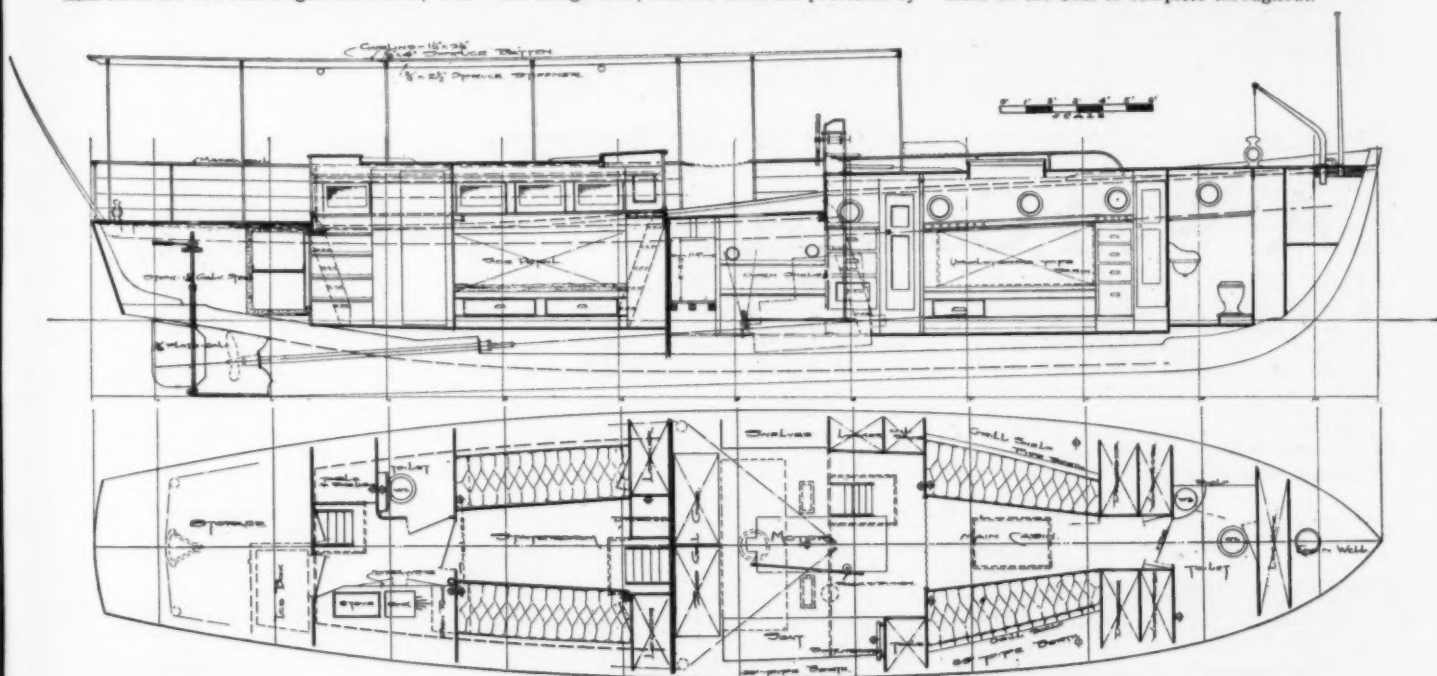
two dressers, having drawers and shelf over, giving fine storage room for the owner's clothing and personal effects. The main cabin, which immediately follows, is arranged with two transom seats having upholstered backs, made on pipe frames so that in a pinch four people can be accommodated.

Aft of the main cabin is the motor room, which is located practically amidships. Entrance is obtained on the port side from the bridge deck. The motor is a 4-cylinder, 4-cycle, $6\frac{1}{2} \times 8$ engine, with all controls brought near the steering-wheel for one-man operation. In the motor room are provided wardrobe for oilskins, tool lockers, general storage lockers, battery lockers, lubricating oil tank, 200-gallon gasoline tank, electric plant, switchboard, and a seat with pipe berth over for the engineer.

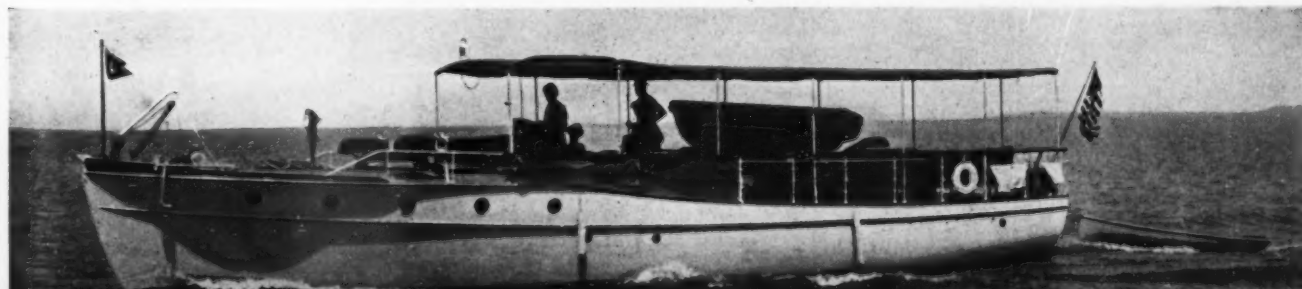
The deck is level with the sheer. An awning extends from the after end of the boat over the bridge deck, and the sides are protected by

mahogany rails with metal stanchions. A passageway is allowed on either side of the trunk house aft.

The arrangement of the after house provides for a combination cabin stateroom having two full-height wardrobes, companionway leading to bridge deck, a dresser with mirror and shelf, etc. This room does not have the appearance of sleeping quarters, as only richly upholstered 10" deep cushions on the seats, with backs to match, are visible. By releasing a little catch, the backs drop over the seats, and a bed all made up ready for immediate use is available. The details of this arrangement have been worked out in a very clever way. The bed is made with a solid wooden frame, arranged with 3" springs and a $4\frac{1}{2}$ " hair mattress. The bedding and pillows are all arranged in place on the bed, and sink out of sight when not in use. The width of the beds is 39". The equipment of the boat is complete throughout.



The cabin arrangement plan and inboard profile of Arbutus II.



Arbutus II, a raised deck cruiser with trunk house aft, greatly resembles Chatana in her outward appearance. Her interior arrangements, however, allow more locker space and more comfort-giving details.

Medium Size Cruisers.

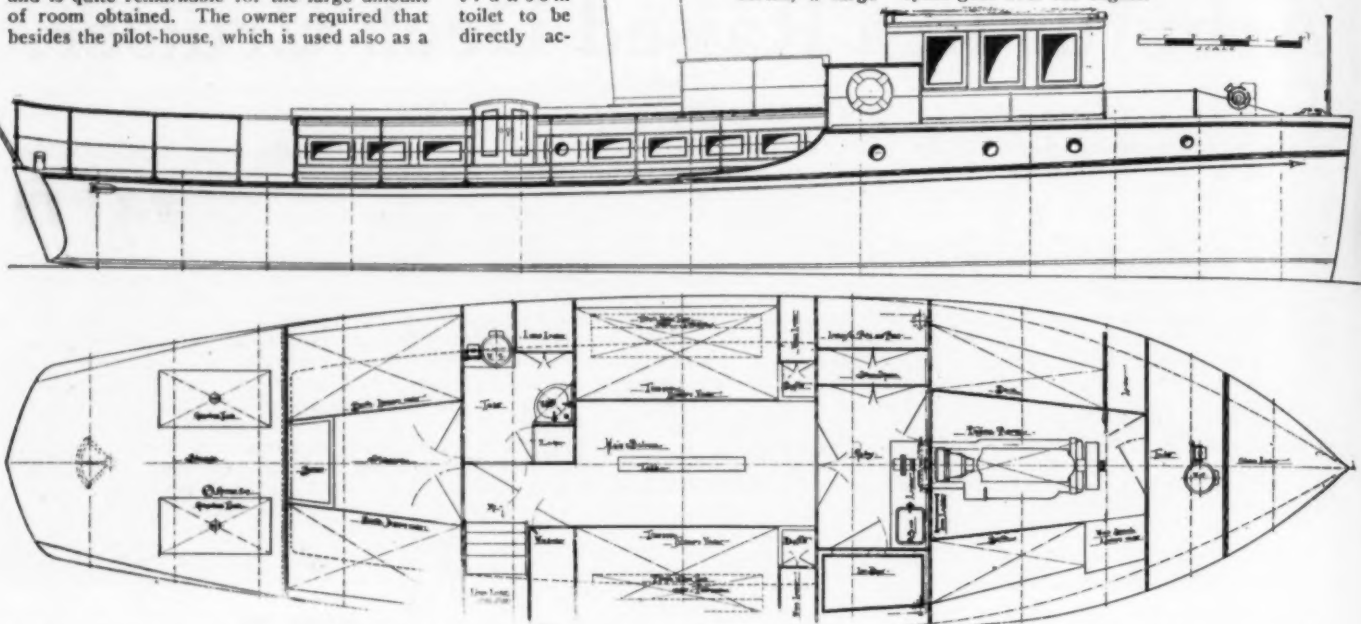
A Pilot-House Cruiser.

THE accompanying plans show a 45' water-line, raised-deck cruiser designed by J. Murray Watts, of Philadelphia, for T. F. Barsby, of Seattle, Wash. It is of the pilot-house type so popular on the Pacific coast, and is quite remarkable for the large amount of room obtained. The owner required that besides the pilot-house, which is used also as a

deck saloon, he should have two large compartments, one of which to be used as a state-room with and the loon with transom toilet to be directly ac-

cessible to both of these compartments.

The galley is forward of the saloon, and meals can be served either directly to the main saloon or to the deck house. The deck house is so arranged that the bulk of the sunken floor space goes over the engine.



This craft belongs to the pilot-house type so popular on the Pacific coast. It is interesting for the large amount of room obtained.

A Well Constructed 45-Footer.

THE plans shown herewith are those of a cruiser designed and built by F. S. Nock, East Greenwich, R. I., for a well known yachtsman. The general dimensions are as follows: Length overall, 45 ft.; length, water-line, 42 ft.; breadth extreme, 10 ft. 7 in.; and draught, 3 ft. 6 in.

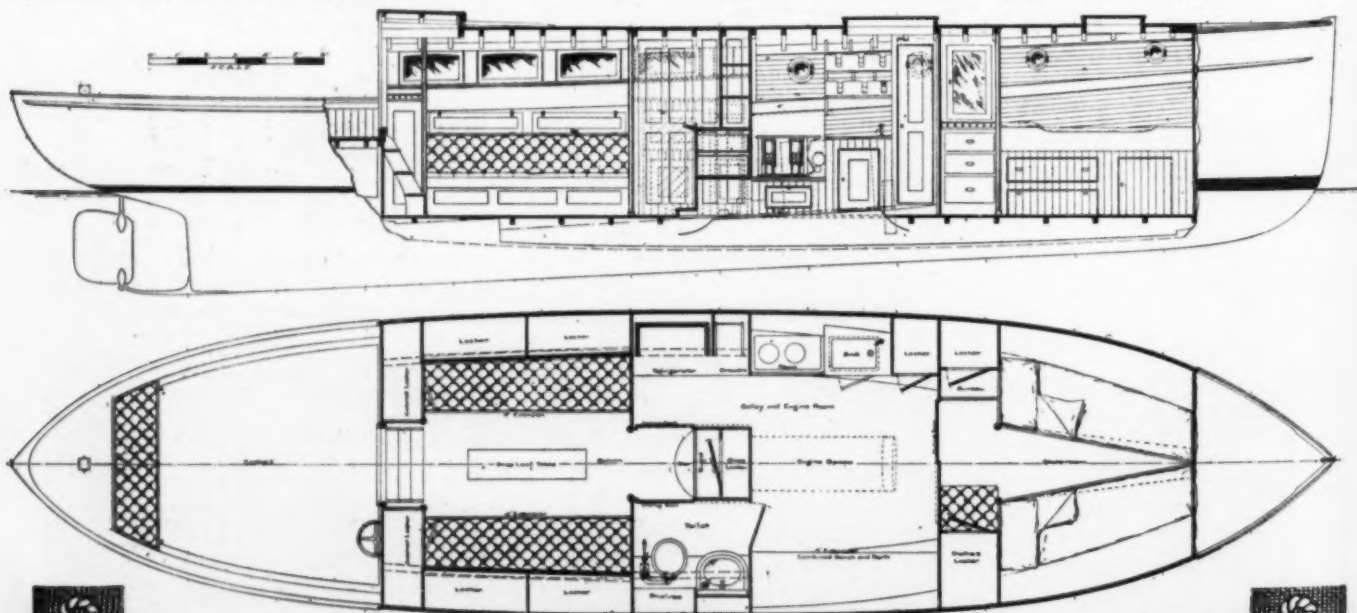
This boat is a combination raised deck and trunk cabin type of cruiser which is very popular at the present time. The plumb stern

insures the maximum length of waterline with the type of stern shown.

The general construction of this boat is somewhat out of the ordinary. She is about 25 per cent. heavier than the average cruiser of her size. The power plant is a 4-cylinder 40 h.p. Lamb engine.

The accommodation plan is arranged as follows: Forward there is a space for stowage of cables, next aft a water tank, next, a state-

room containing two berths, bureau, etc. Next aft is the engine-room and galley. On the port side there is a bench with lockers under for stowage of tools, etc., and the top of the bench is so arranged that it can be utilized as a berth for paid hand by pulling out the extension. The main part of the saloon is 8½ ft. in length. There is an alcove forward and the after end is fitted with two cabinet lockers, extension berths, drop-leaf table, etc.



The general construction of this boat is somewhat out of the ordinary, since she is twenty-five per cent. heavier than the average cruiser of her size.

Medium Size Cruisers.

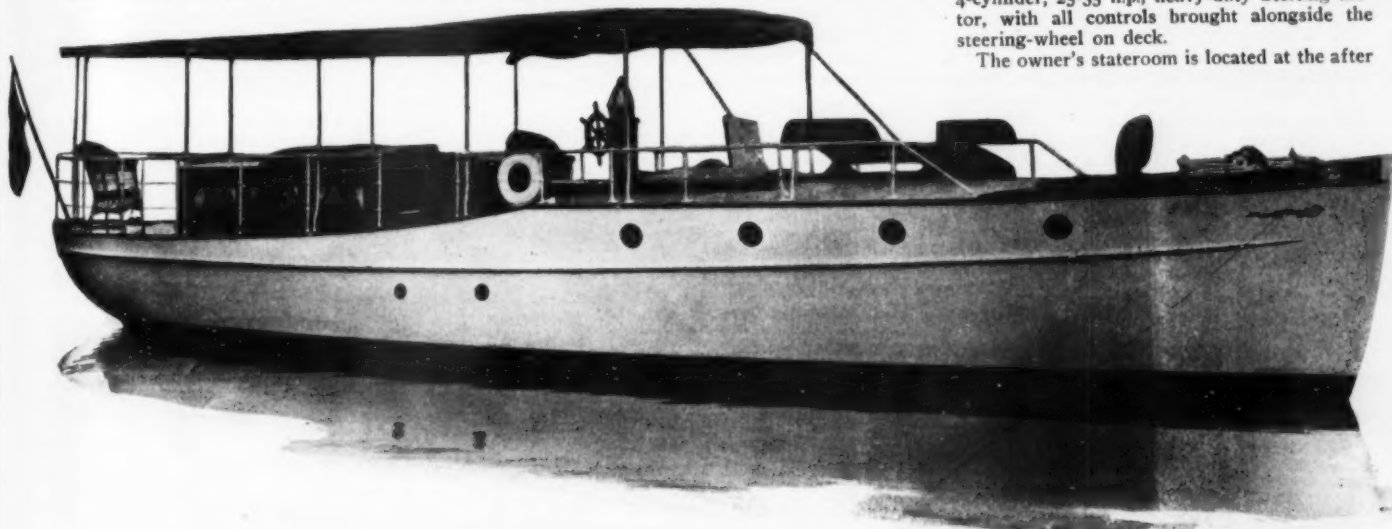
Chatana, a 48-Footer.

AS IS usually the case, when the motor boat bug bites his victim the first time, he usually gets busy a year or two afterwards with a more vicious bite. This is just what happened to Mr. J. G. Heaslet, chief engineer for the Studebaker Corporation, of Detroit, Mich., who purchased from the Matthews Boat Company last year, the little 38' cruiser, Natoma, and this year placed his order for the

with icebox, stove-bench, dish racks, sink, lockers, etc. Immediately aft of this are two large hanging lockers between the galley and the main cabin. The main cabin is equipped with two transom seats having drawers and lockers under. Transoms are fitted with extensions, making up into 34" berths. The boat is finished in white enamel with mahogany trim. At the after end of the main cabin there

is a toilet having water closet and folding basin. A swinging door opens into the motor room, the motor being partly located under the bridge deck, with 3' headroom at the forward end of the machine. The headroom under the bridge deck is about 4' 7", giving good working space about the machinery. The motor room is equipped with an emergency hatch and berth for engineer. The motive power consists of a 4-cylinder, 25-35 h.p., heavy-duty Sterling motor, with all controls brought alongside the steering-wheel on deck.

The owner's stateroom is located at the after



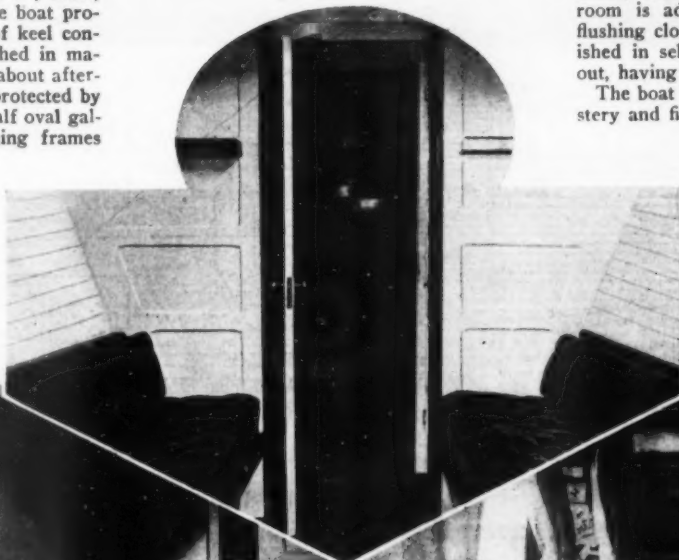
48' cruiser, Chatana, illustrated in the photographs. The general dimensions of the boat are: Length overall, 48'; beam, 10' 6"; draft, 3'. The general construction of the boat provides for the usual vertical type of keel construction, cedar hull, exterior finished in mahogany, with yacht-laid pine decks about afterhouse and on bridge. The hull is protected by a heavy fender strip capped with half oval galvanized iron. The rails and awning frames are also of galvanized iron.

The first thing that impresses one on seeing the boat, is the large amount of deck space available. The boat is controlled from the steering-wheel location, and the motor handled by one man. The arrangement provides for a galley of comfortable size forward, equipped

Chatana, the result of a second bite of the motor boat bug.

end of boat, with a 4' berth on one side, and sofa berth opposite; the furniture consists of chairs, wardrobes, lockers, etc. A second toilet-room is adjoining, fitted with lavatory and flushing closet. The owner's stateroom is finished in selected African mahogany throughout, having finely figured panels.

The boat is finished complete with all upholstery and fittings and furnishings, all built at the builders' works. The cushions and bed are very deep, with comfortable springs. The awning is arranged to protect all the deckroom, and fitted with side curtains. A small, light-weight tender is carried, and the decks provided with wicker furniture. Chatana is considered the handsomest boat of her size around Detroit.



Forward end of the main cabin.



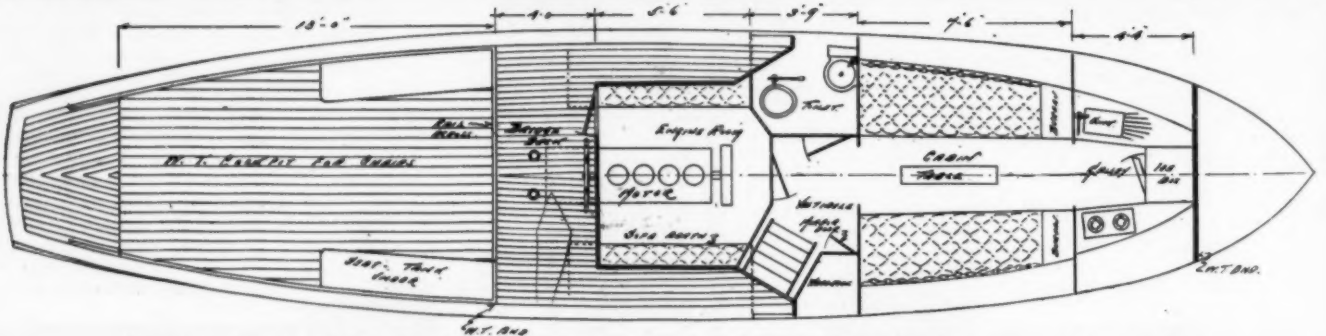
Chatana's 35 H. P. Sterling motor.



A corner of the owner's stateroom.

Seaway, a One-Man Boat.

A black and white photograph of a small, white, single-deck boat with a dark hull, sailing on the water. The boat has a canopy over the cabin area and an American flag flying from the stern. A person is visible on the deck near the stern.



Daneva II, a 20-Mile Cruiser.

This type of boat is becoming very popular, and is fast supplanting the fast open runabout of the same size, for afternoon parties, short

Medium Size Cruisers.

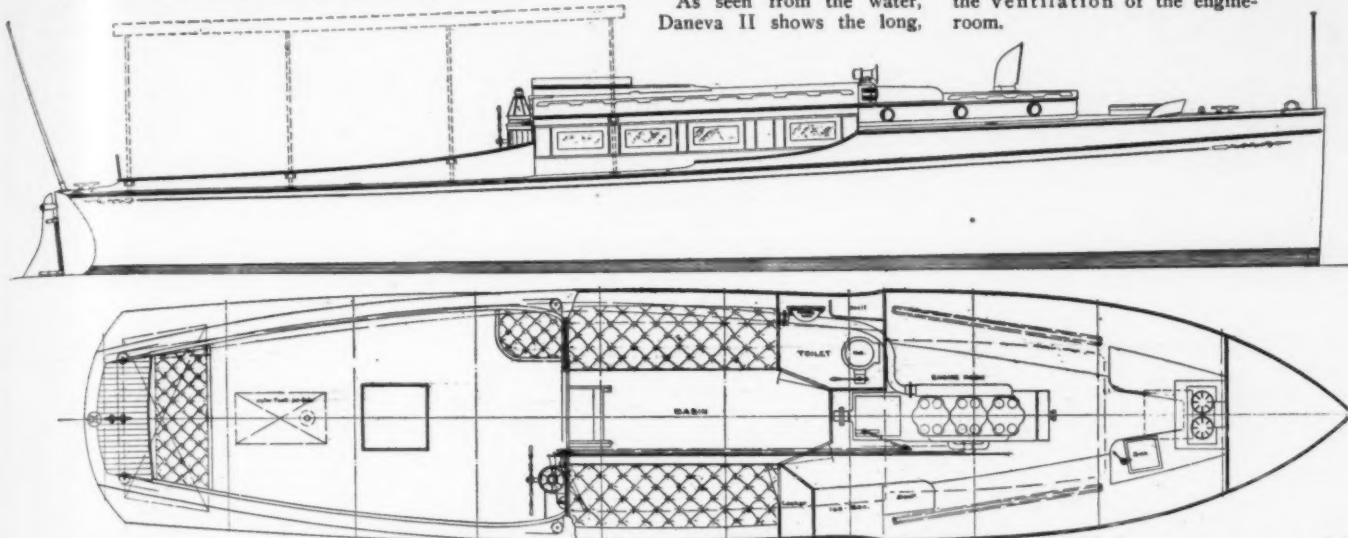
cruises, gunning trips, and as a tender for racing yachts.

She was built, under the personal supervision of Bowes & Mower, by John P. Kirk, of Toms River, N. J., and is very handsomely fin-

ished in every detail. Her dimensions are: Length overall, 37 feet, 6 inches; beam, 7 feet, 6 inches; draught, 2 feet, 10 inches, and freeboard at bow, 4 feet, 6 inches.

As seen from the water, Daneva II shows the long,

lean lines of the speedy boat. She carries no signal mast, and her deck house being low, wind resistance is reduced to a minimum. A cowl forward admits air for the ventilation of the engine-room.



Daneva II belongs to a type that is fast becoming popular, as she combines seaworthiness, speed, and fair cabin accommodations successfully.

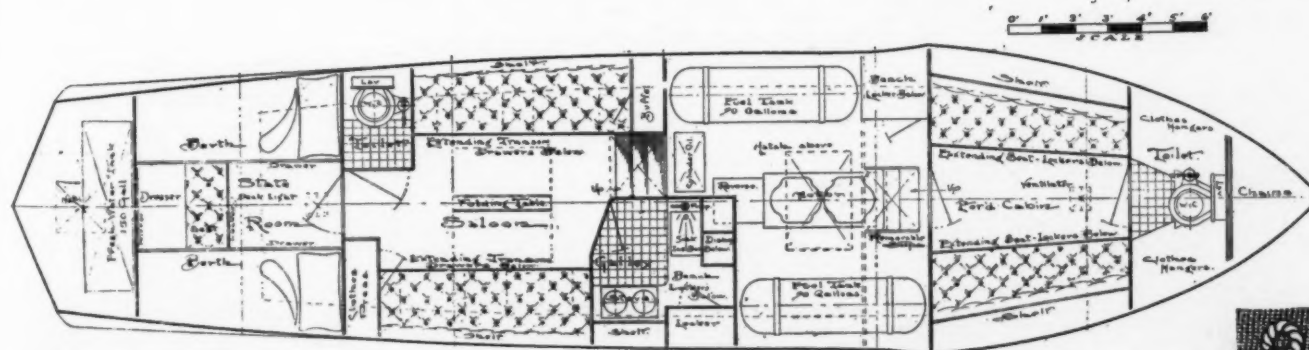
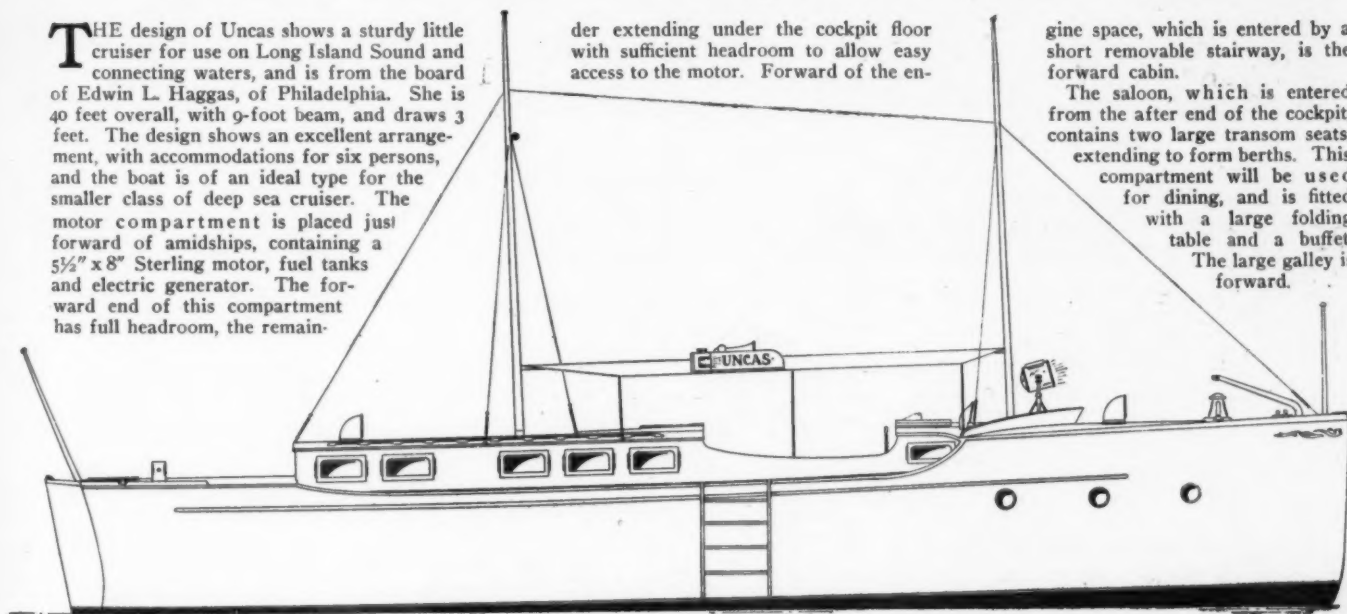
A Cruiser for Long Island Sound.

THE design of Uncas shows a sturdy little cruiser for use on Long Island Sound and connecting waters, and is from the board of Edwin L. Haggas, of Philadelphia. She is 40 feet overall, with 9-foot beam, and draws 3 feet. The design shows an excellent arrangement, with accommodations for six persons, and the boat is of an ideal type for the smaller class of deep sea cruiser. The motor compartment is placed just forward of amidships, containing a $5\frac{1}{2}$ " x 8" Sterling motor, fuel tanks and electric generator. The forward end of this compartment has full headroom, the remain-

der extending under the cockpit floor with sufficient headroom to allow easy access to the motor. Forward of the en-

gine space, which is entered by a short removable stairway, is the forward cabin.

The saloon, which is entered from the after end of the cockpit, contains two large transom seats, extending to form berths. This compartment will be used for dining, and is fitted with a large folding table and a buffet. The large galley is forward.



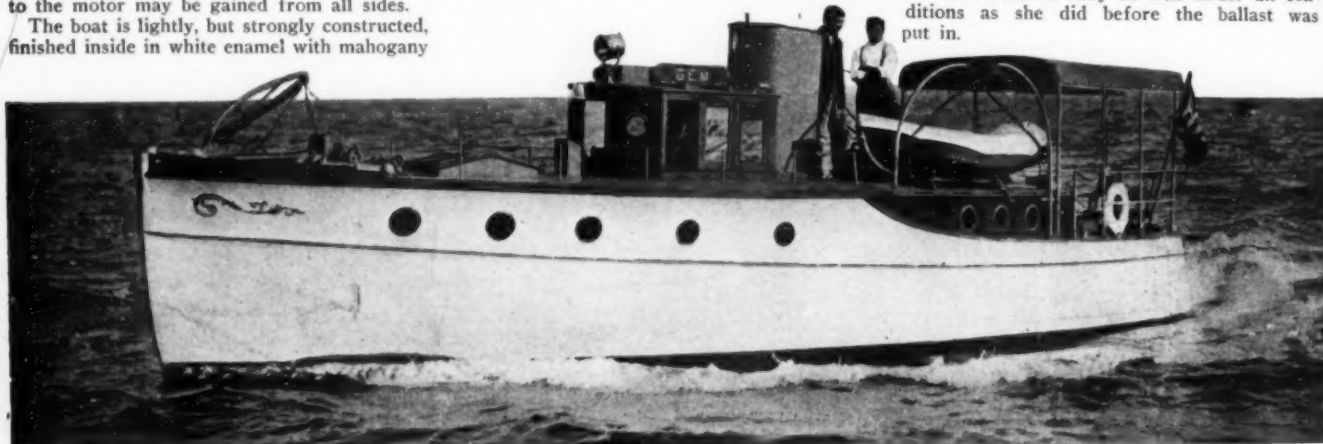
Uncas is a sturdy little 40-footer of the deep sea type with accommodations for six persons.

Cruiser With Novel Features.

The boat is lightly, but strongly constructed, finished inside in white enamel with mahogany

Just forward of the enclosed engine and on its port side is a door connecting the galley with the toilet in which is the usual equipment.

The original design called for a much lighter boat than Gem now is, but her owner decided to weight her down with several tons of ballast. Her speed of approximately 12 miles is made with this extra weight in her hold, and she behaves fully as well under all conditions as she did before the ballast was put in.



The top drawing is a longitudinal section of the USS Albatross, showing the ship's hull, internal compartments, and deck structures. The hull is labeled with 'SS-218' and 'Albatross'. The internal compartments include the 'Engine Room', 'Battery Room', 'Crew Quarters', 'Mess Room', 'Galley', 'Store Room', 'Sick Room', 'Surgical Room', 'Hospital', 'Infirmary', 'Dormitory', 'Bath', 'Toilet', 'Shower', 'Laundry', 'Clothing Room', 'Shoe Room', 'Hat Room', 'Trunk Room', 'Luggage Room', 'Mail Room', 'Post Office', 'Telegraph Room', 'Radio Room', 'Signal Room', 'Compass Room', 'Chart Room', 'Navigation Room', 'Engine Room', 'Battery Room', 'Crew Quarters', 'Mess Room', 'Galley', 'Store Room', 'Sick Room', 'Surgical Room', 'Hospital', 'Infirmary', 'Dormitory', 'Bath', 'Toilet', 'Shower', 'Laundry', 'Clothing Room', 'Shoe Room', 'Hat Room', 'Trunk Room', 'Luggage Room', 'Mail Room', 'Post Office', 'Telegraph Room', 'Radio Room', 'Signal Room', 'Compass Room', 'Chart Room', 'Navigation Room'. The deck structures include the 'Main Mast', 'Mizzen Mast', 'Fore Mast', 'Main Mast', 'Mizzen Mast', 'Fore Mast'. The hull is labeled with 'SS-218' and 'Albatross'. The internal compartments include the 'Engine Room', 'Battery Room', 'Crew Quarters', 'Mess Room', 'Galley', 'Store Room', 'Sick Room', 'Surgical Room', 'Hospital', 'Infirmary', 'Dormitory', 'Bath', 'Toilet', 'Shower', 'Laundry', 'Clothing Room', 'Shoe Room', 'Hat Room', 'Trunk Room', 'Luggage Room', 'Mail Room', 'Post Office', 'Telegraph Room', 'Radio Room', 'Signal Room', 'Compass Room', 'Chart Room', 'Navigation Room'. The deck structures include the 'Main Mast', 'Mizzen Mast', 'Fore Mast', 'Main Mast', 'Mizzen Mast', 'Fore Mast'.

The bottom drawing is a transverse section of the USS Albatross, showing the ship's width, internal layout, and structural details. The hull is labeled with 'SS-218' and 'Albatross'. The internal compartments include the 'Engine Room', 'Battery Room', 'Crew Quarters', 'Mess Room', 'Galley', 'Store Room', 'Sick Room', 'Surgical Room', 'Hospital', 'Infirmary', 'Dormitory', 'Bath', 'Toilet', 'Shower', 'Laundry', 'Clothing Room', 'Shoe Room', 'Hat Room', 'Trunk Room', 'Luggage Room', 'Mail Room', 'Post Office', 'Telegraph Room', 'Radio Room', 'Signal Room', 'Compass Room', 'Chart Room', 'Navigation Room'. The deck structures include the 'Main Mast', 'Mizzen Mast', 'Fore Mast', 'Main Mast', 'Mizzen Mast', 'Fore Mast'. The hull is labeled with 'SS-218' and 'Albatross'. The internal compartments include the 'Engine Room', 'Battery Room', 'Crew Quarters', 'Mess Room', 'Galley', 'Store Room', 'Sick Room', 'Surgical Room', 'Hospital', 'Infirmary', 'Dormitory', 'Bath', 'Toilet', 'Shower', 'Laundry', 'Clothing Room', 'Shoe Room', 'Hat Room', 'Trunk Room', 'Luggage Room', 'Mail Room', 'Post Office', 'Telegraph Room', 'Radio Room', 'Signal Room', 'Compass Room', 'Chart Room', 'Navigation Room'. The deck structures include the 'Main Mast', 'Mizzen Mast', 'Fore Mast', 'Main Mast', 'Mizzen Mast', 'Fore Mast'.

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EXPRESS AND DAY CRUISERS

A 30-Miler of Unique Design.

THE three plans on this page, from the boards of the Atkin-Wheeler Company, Huntington, L. I., depict a high speed day cruiser of rather unique design. It is 50 feet in length overall and has a beam of 9 feet. The freeboard and sheer of the boat are such as to contribute in every way toward that seaworthiness which is the prime consideration.

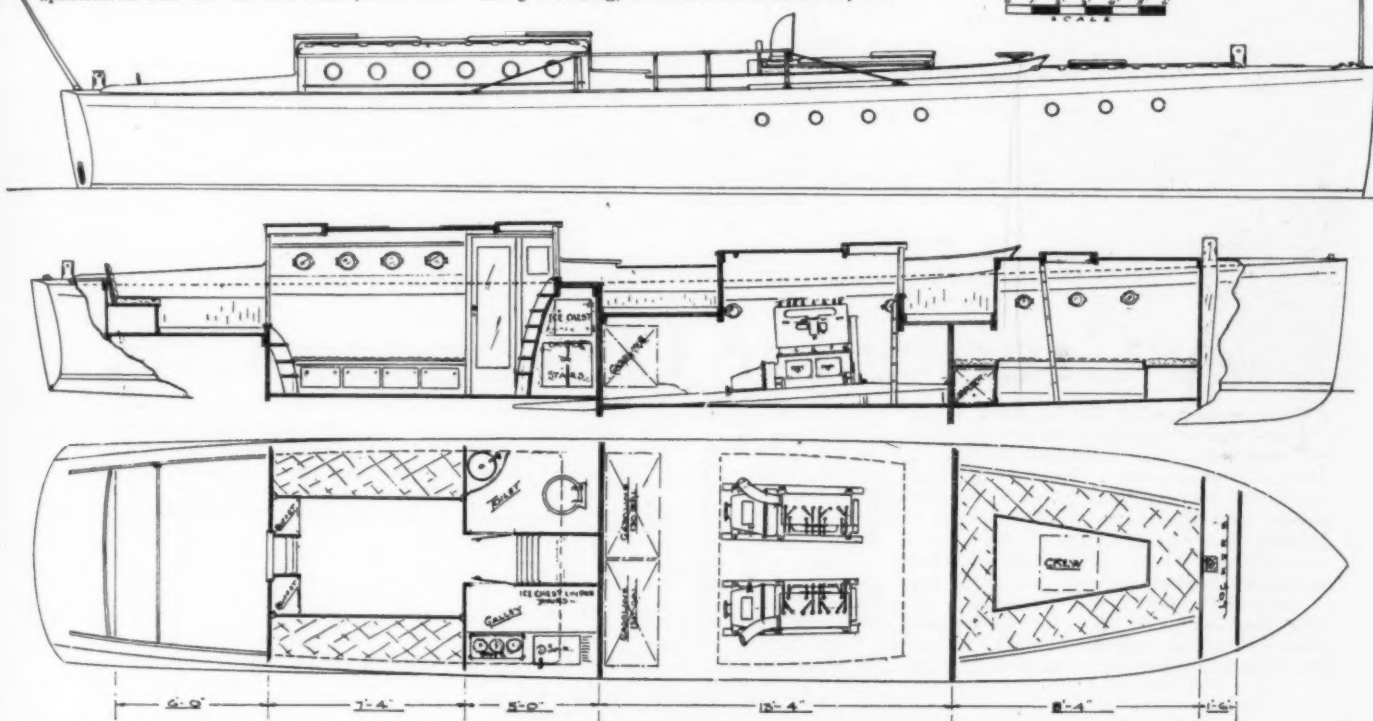
There is a cockpit forward for the steersman and in it are located the entire controls for the two motors. Access to the motors is obtained only through the forward cockpit. In this way the crew is kept forward, and the main cockpit is left free to the owner and his guests. The cockpit is fitted with a heavily upholstered seat for its full width, and with

the addition of four or five wicker chairs gives seating room for a considerable party.

The main cabin is reached through a companionway at the after end of the main cockpit, or from steps leading down from the after cockpit. Its fixed equipment consists of two Pullman berths and buffet, and when furnished with chairs and table serves as dining-saloon. On the port side forward opening into the vestibule at the foot of the stairs is the toilet room, while the corresponding position on the starboard side is taken up by the galley. The galley is equipped with three-burner alcohol stove, sink, and dish lockers, while room is found for a good sized refrigerator under the stairs. These two rooms are 5 feet long, while the main cabin is 7 feet

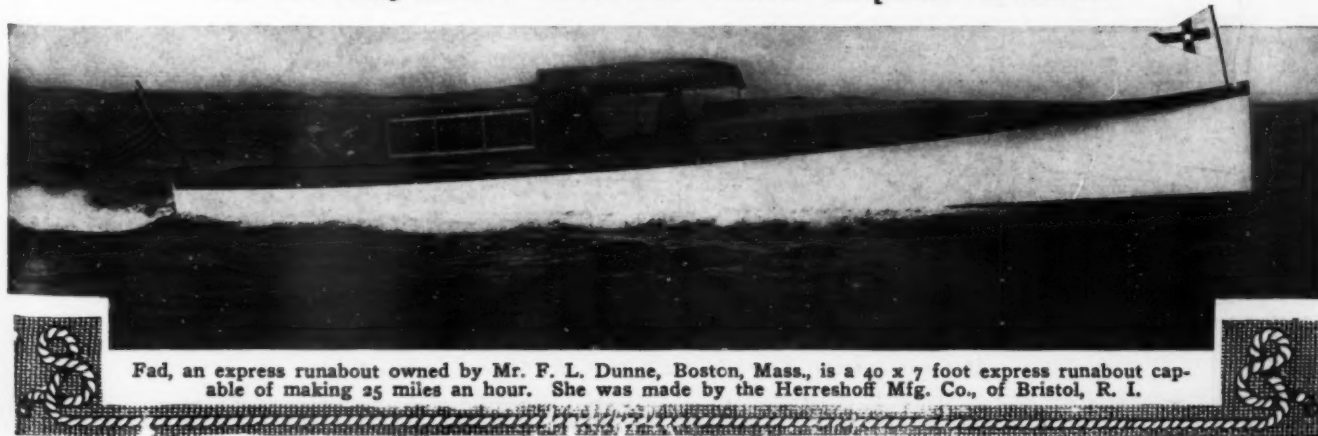
4 inches long by the width of the boat.

A watertight bulkhead separates the owner's quarters from the engine-room, and placed just forward of this bulkhead and aft of the motors are two gasoline tanks having a combined capacity of 260 gallons. Two 4-cylinder special Achilles motors of 7-inch bore by 11-inch stroke of 150 h.p. each supply the power which is necessary to propel the boat at her speed of over 30 miles an hour. The motors will be fitted with self-starters, electric lighting plant, and all necessary equipment to give service and efficiency. There is full headroom around the engines. At the forward end of the engine-room is the ladder providing exit to the steersman's cockpit.



The design of this craft shows the owner's quarters entirely separated from the engine-room and crew's quarters, while access is had to the engines and the boat is steered from a separate cockpit forward.

A Twenty-Five Mile An Hour Express Cruiser.



Fad, an express runabout owned by Mr. F. L. Dunne, Boston, Mass., is a 40 x 7 foot express runabout capable of making 25 miles an hour. She was made by the Herreshoff Mfg. Co., of Bristol, R. I.

An Unique Shoal-Draft Cruiser.

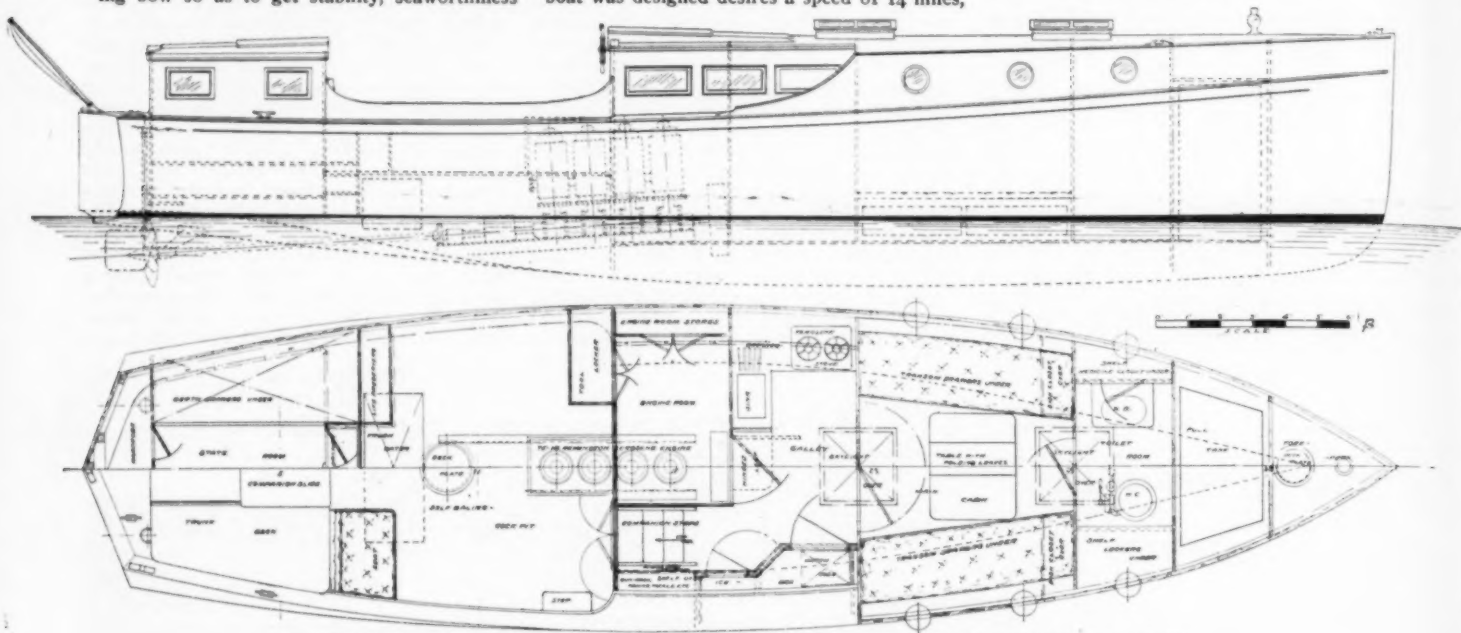
THE accompanying plans show a rather unique and, at the same time, attractive type of cruiser, which has been prepared in the office of Messrs. Gielow & Orr, of New York City. The design shows a boat with plumb stem and transom stern, the idea being to build a full bodied boat with moderate flaring bow so as to get stability, seaworthiness

and good running lines. The intention is to install a 4-cylinder 75 h.p. Remington kerosene oil engine, as this particular boat is to be used where gasoline is rather difficult to obtain.

The dimensions of this boat are, length overall, 40 feet; beam extreme, 10 feet; and draft, 2 feet. The gentleman for whom this boat was designed desires a speed of 14 miles,

and with a boat of these dimensions, particularly the shoal draft and comparative high speed with kerosene oil engine, this is a rather remarkable proposition.

This same size and style boat could very readily have a gasoline engine of smaller power and less speed installed.



A shoal-draft cruiser whose power installation will be a 75 H. P. Remington kerosene engine.

A Cruiser for Off-Shore Use.

THE accompanying sketches show a fast and seaworthy 50 by 8 foot 6 inch cruiser designed by Sam Brown, of Marblehead, Mass., for off-shore use. Her long graceful sheer with ample freeboard forward insures dryness in a choppy sea, while her stern is rounded enough to take away the flat appearance of a square stern; the sections are sharp to insure a good sea boat in a quartering sea.

The cabin is laid out with a stateroom and toilet forward. Next aft is the engine-room fitted with a pipe berth for the man. The 45 h.p. motor which gives her a speed of 14 miles

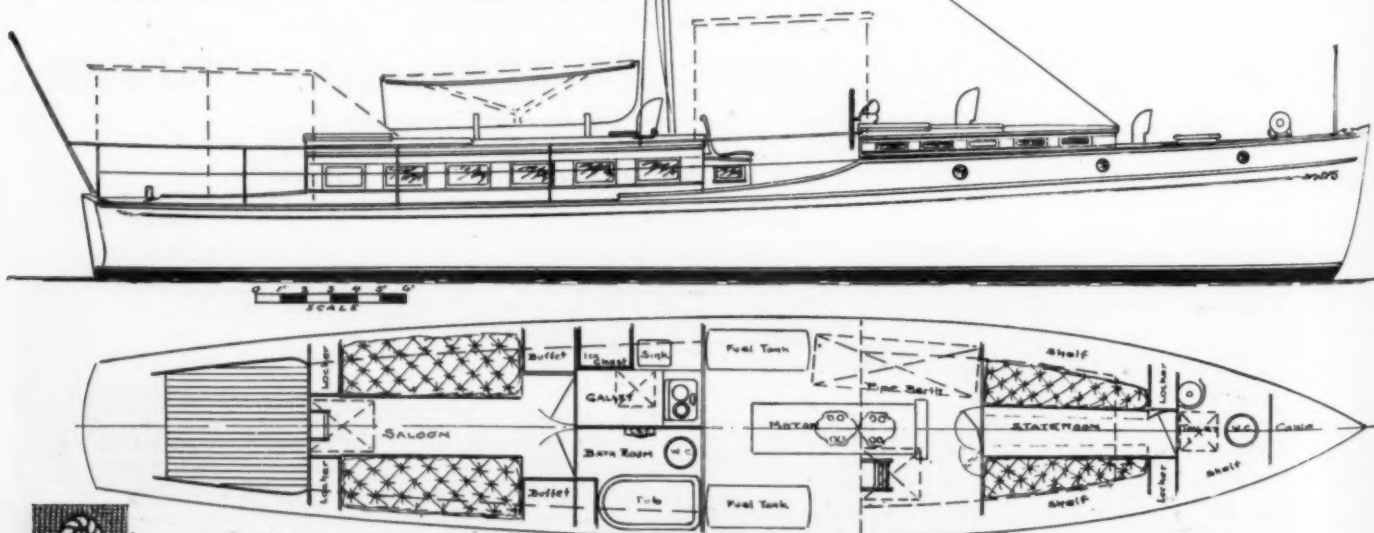
and a cruiser is partly un- but it is acc- sides. The tered from the Opening off its end are a small bathroom and a galley.

The exterior is planned with a low deck house on the

ing speed of 12 miles, der the bridge deck, cessible from all saloon is en- cockpit aft. forward

raised deck. Next there is a roomy bridge deck with the wheel and controls forward and a deck seat which forms a ventilator for the engine-room aft. The cockpit is left open for chairs.

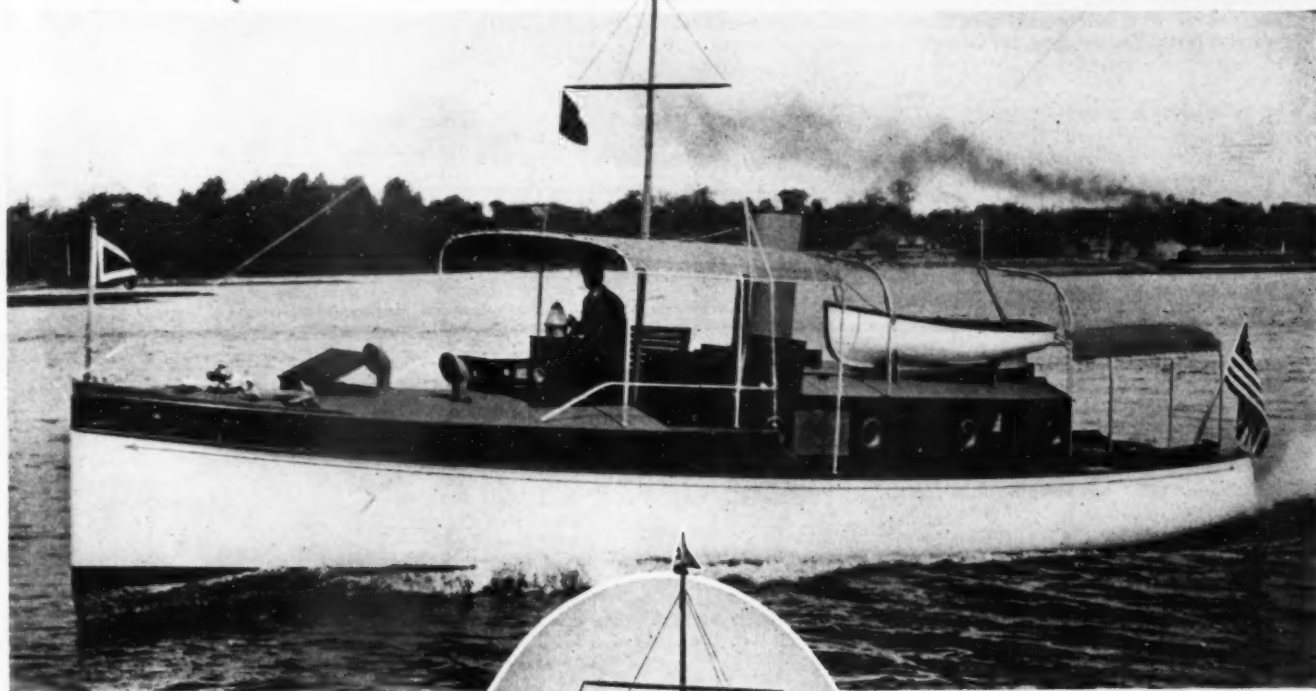
The tank capacity will give this craft a cruising radius of 350 miles. Her fuel tanks are slung under the bridge deck. Ventilation in the engine-room is thoroughly taken care of by a cowl ventilator and open windows at the forward end, and by the windows in the seat on the bridge deck.



Her long, graceful sheer with ample freeboard forward insures dryness in a choppy sea.

to accommodate a fair-sized galley on the port side, opening directly off the narrow vestibule at the foot of the stairway. The galley equipment includes a two-burner stove, sink, and a rather large refrigerator. Opposed to the galley on the port side is a toilet-room with wash basin flushing toilet. The aft, having equipment of extension trans-

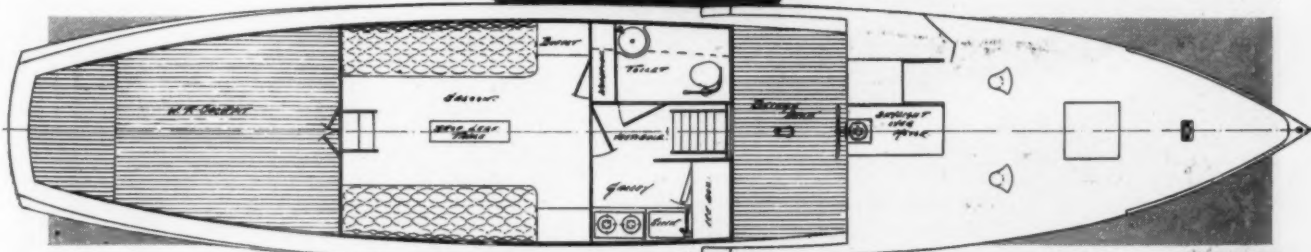
table, and buffet. A wardrobe is placed on the port side forward, encroaching on the toilet-room space. The saloon, with 6-foot 2-inch headroom, is in white enamel with mahogany trim and furniture; a moss-green scheme of upholstery of "Foggs" very best makes this room most attractive, and anything but the usually stuffy little cabin. This is largely due, too, to the extreme headroom, and to the exceptional illumination that is afforded by the



A black and white photograph of a small boat, possibly a fishing vessel or a small ferry, viewed through a large oval frame. The boat has a dark hull and a light-colored canopy supported by thin poles. A mast with a crossbar and a small flag is visible. The boat is on the water, and the background shows a distant shoreline with trees. The entire image is enclosed within a large, white oval border.

large, solid plate glass panels in the house side, and to the 9-inch drainer air ports, these latter permitting excellent ventilation.

A boat with this accommodation is perfectly practical for moderate cruising for a party of four. She can negotiate practically any stress of weather which is to be encountered on Long Island Sound, though her speed will enable her to make port at any time before a serious storm could arise.



Express and Day Cruisers.

36-Foot High Speed Cruiser.

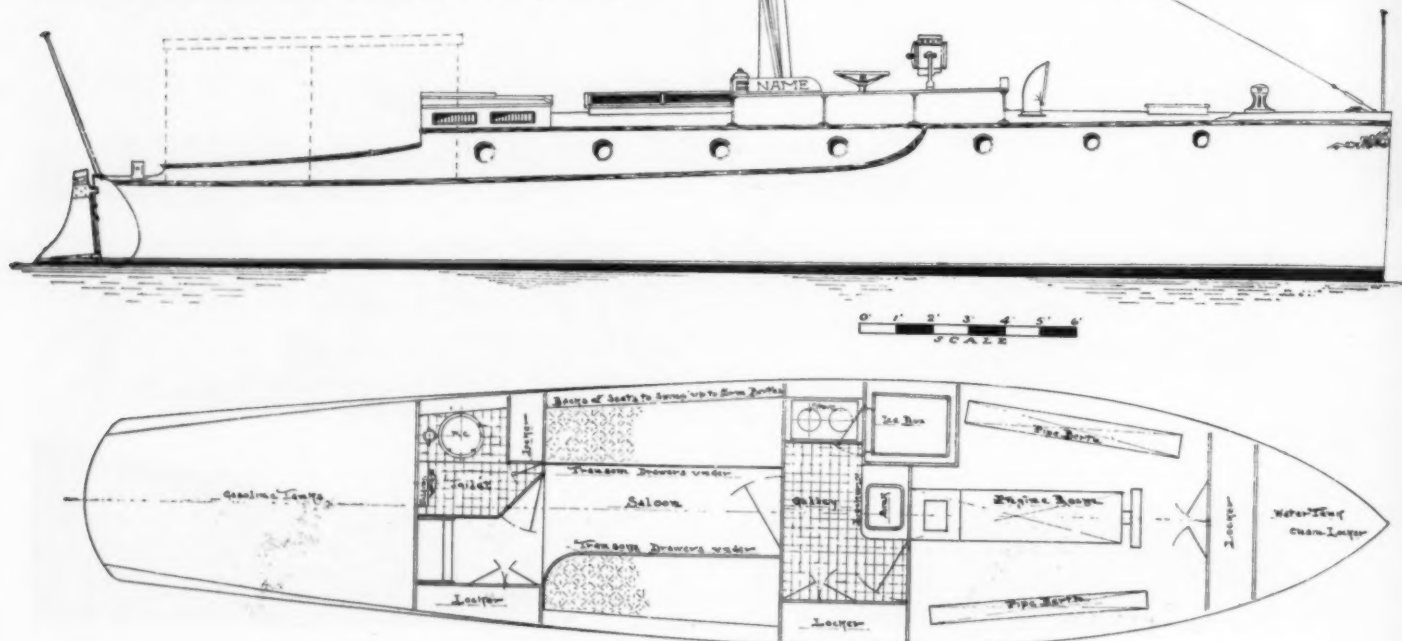
THE accompanying plans show a high-speed cruiser recently designed for Mr. John C. Stolz, of Philadelphia, by William Edgar John, of the same city. The boat is 36 feet in length over all, with a beam of 7 feet 6 inches, and a draft of 3 feet. The plans show a low, rakish craft with a raised deck throughout. All the main compartments below decks are connected. At the extreme bow, and separated from the engine-room by a steel bulkhead, are the chain locker and water tanks. The engine-room is equipped with a 6-cylinder Frisbie motor of 6-inch bore by 6-inch stroke. Two pipe berths for the crew are swung from

loos, which opens of the galley, is comfortable. There on either side, the which swing up and per berths, bringing the sleeping accommodations up to four. A toilet-room is located aft on the port side. A folding wash-basin and toilet are conveniently arranged. A

aft directly out very roomy and are transoms backs of form up-

bridge is located forward, with a low rail around it which protects the helmsman from any solid water which might come aboard.

The finish of the boat inside and out is very tastefully done. The interior of the cabin is enameled white, trimmed with mahogany, and all the exterior bright work is of mahogany. The hull, above the waterline, is painted black and bright green below, with a white boot-top between. The decks are finished in navy buff. A small signal mast set aft of the bridge adds to the ap-



The plans of this cruiser show a low, rakish craft with raised deck carried throughout.

either side of the room, and there is ample locker space forward. The boat is equipped with searchlight and electric lighting plant.

Aft of the engine-room is arranged the galley, which occupies in its section the full width of the boat. It is equipped with refrigerator, stove and sink, conveniently located. The sa-

small linen locker is placed at the forward end. The remaining space aft of the saloon is taken up with a wardrobe and companionway to the cockpit. This deck is quite roomy, and is well protected from the weather both by the deck-house and by a substantial awning. Beneath it are installed the gasoline tanks. A steering

pearance of the boat, which is made with V-transom stern and carries its rudder outboard. Ventilation has been well taken care of, a cowl forward admitting air to the engine-room, and all the ports being arranged to open and swing in. The boat has an estimated speed of 18 miles per hour.

A Speedy Forty-Foot Day Cruiser.



Lillian S., owned by Mr. O. S. Seidel, of Philadelphia, makes light work of 19 miles an hour with six passengers aboard. She is powered with two six-cylinder Loew-Victor motors.

HYDROPLANES and FAST RUNABOUTS

Progress in Speed Boat Design.

Requisites for the Successful Runabout of Today, and Some of Its Present Possibilities.
The Great Strides Made in Hydroplane Design, and the Results Thereof.

By C. F. Chapman.

WHAT is the typical speed boat of the present day? How does it differ from that of a few years ago, as regards design, construction, power and capabilities? These are questions not answered in the few words of "Practically no change for the past few years." For, if there is any branch of the marine industry or any American industry, in fact, which has seen greater changes or more rapid strides in advance, both theoretically and practically, than that of speed boat design and practice we have not seen any record of it.

When one mentions a speed boat, he does not necessarily imply only those craft capable of forty miles an hour or more, to the exclusion of the many thousands of so-called runabouts of to-day, for, strictly speaking, the open boat of yesterday has been so improved upon and developed that a new field has opened up for this type of craft. Now we find the runabout successfully taking the place of what a few years ago would have been termed an out-and-out speed boat, as far as conditions of speed are concerned, and being a great improvement upon the latter as regards accommodations, seaworthiness and reliability.

The two classes, speed boats and runabouts, merge together with no clear-cut line between them, and no definition, technical or otherwise, could be formulated which would clearly separate them.

The runabout is generally considered as any half-deck boat which has accommodations for four or more people aboard, capable of upwards of fifteen miles an hour, and having the engine under cover. In practice, their lengths vary anywhere from twenty to thirty feet, and sometimes even longer. An overall beam of five feet is about the minimum for this type of boat, and six feet, or a trifle over, is about the maximum beam for the longer boats.

The question of the proper power and weight to give the runabout is a very important one, and one which generally receives less than its proper amount of attention. One basic principle should be kept in mind from the start and never lost sight of throughout the designing and building of the hull, and the installation of the power plant, and that is, to obtain speed efficiently the weights must be kept down to the very lowest figure practical. Trying to obtain speeds with a heavy outfit, improperly proportioned by the addition of excessive powers, is very bad practice, and one which will never give satisfaction in the end. Two-cycle motors for runabout service should not weigh over 15 or 18 pounds per horsepower, and four-cycle engines 20 to 25 pounds per horsepower. These weights can be shaded considerably, especially in the higher powers, as the weight does not go up in direct proportion to the increase in horsepower.

Total weights of engine and hull, of course, depend largely upon the amount of power installed, and it is hard to lay down any hard and fast rules, but in the range from the 20-footer, which is fitted with 30 h.p., up

to the 32-footer with 60 h.p., the total weights may very efficiently come down to 100 pounds per foot of overall length. Cinderella, one of the most successful of the fast runabouts of the year, weighed 2,652 pounds with a crew of two aboard. She is a 26-foot boat, powered with a four-cylinder, four-cycle, $5\frac{1}{2}$ " x 6" motor, weighing about 800 pounds, and which is turned over 1,400 r.p.m., the engine and propeller shaft being connected direct. This craft was about as near to a true hydroplane as it is possible to make a displacement boat come, and at her maximum speed of thirty miles an hour, it was readily agreed upon by everybody that ever rode in her or saw her running, that she "planed" at speed. In this boat, therefore, we find the upper limit of the runabout qualities and the characteristics of the hydroplane beginning to appear.

One should not believe for a moment that a successful runabout is not possible at weights above 100 pounds per foot of length, for by far the greater majority of this type of boat weigh much in excess of this figure.

Analyzing the under body forms we find the so-called V bottom coming more and more into popular favor every year. For moderate amounts of power this trend is very justified, for this form is easy to drive as a displacement boat, is very seaworthy, strong in construction, and, above all, easy to build. Starting at the forward section in a very sharp V, these gradually flatten out as one works aft until the stern is reached, when the V is much less prominent and sometimes has even disappeared, especially in hulls designed for more than the average amount of power.

There is a strong tendency especially on the part of those who are more or less new in the motor boating game, and, some, unfortunately, who ought to know better, to install the automobile engine in boats, not only for runabout service, but in cruisers, and oftentimes even in heavy working and commercial boats. This condition is not brought about by any failure of the marine motor to produce the goods, or any scarcity of marine models to meet any specific condition or requirement, but, no doubt, due to the placing on the market of job lots automobile engines, which are offered at attractively low prices. Needless to say, they are much less suited for severe marine service than are engines especially designed for the purpose. In rare cases, however, when conditions are just right, the automobile engine has been known to work out with a fair degree of success, but even then there are many items which should be taken into consideration before making a choice.

Passing to the next higher degree of development in the family tree of motor boating, we come to the hydroplane, and one characteristic at least stands out above all others, as the principal advance made during the year, and that is reliability. Quite in contrast to the hydroplane of 1912 does the one of this season stand out. Instead of a flimsy shell—a mere locomotive in an onion peel, as it was appropriately termed—

we find, generally speaking, a much more sane production, fairly seaworthy, and a design which is a departure from the old hit or miss method. The experimental results of the past few years, since the passing of the high-powered displacement racer, have been profitably taken advantage of, and instead of a hull thrown together in a week, we find one actually designed along scientific lines, intended to be used for a definite purpose. No longer does one expect a 20-footer with 300 horsepower to successfully meet conditions which worry a Bermuda racer. Neither does one expect an outfit weighing forty pounds to the horsepower to have much show against a boat weighing only 12 or 15 pounds per horsepower.

Instead, now we find boats like Kitty Hawk V, a 26-foot Hacker design, with a 250 h.p. motor, which did ten real miles at Toledo this summer at the rate of 47.2 miles per hour. This boat, complete, weighed 3,400 pounds, which is only about 14 pounds per horsepower, much lighter than most earlier boats were. Of this weight, the hull claimed about 40 per cent. Engine revolutions of about 1,500 per minute were used, and with a gear ratio of 1 to 1.25 we get a propeller speed of 1,900 r.p.m.

Later in the season Oregon Kid comes along and beats Kitty Hawk's record all to smash, and this boat was only a 20-footer with one-half the power—125 h.p., in the same make of motor, and half the number of cylinders. What is the secret of it? Just this: Instead of 14 pounds per horsepower, as in Kitty Hawk V, we find Oregon Kid weighing less than 12 pounds per horsepower. These two boats being from the boards of the same designer, and, in all probability, embodying the same principles and ideas of the architect, offer an excellent example of the effect of weight in the ultimate speed of the hydroplane.

Hazel II, another of this year's productions, with two aeroplane engines, connected in tandem, was probably a trifle lighter than either of the above, and while she showed remarkable bursts of speed at times, still there were other features of her design which were not quite completed in time to allow her to show her capabilities.

Probably the most striking development and advance made in speed boat design during the past year is the perfection of the surface propelled, and inverted V-type of hull, which many are familiar with in the several Sea-sled models which have appeared recently. One of the latest of these is used as a yacht tender, and is 18 feet long, and powered with a six-cylinder $4\frac{1}{2}$ " x $4\frac{1}{2}$ " engine, made 29 m.p.h.

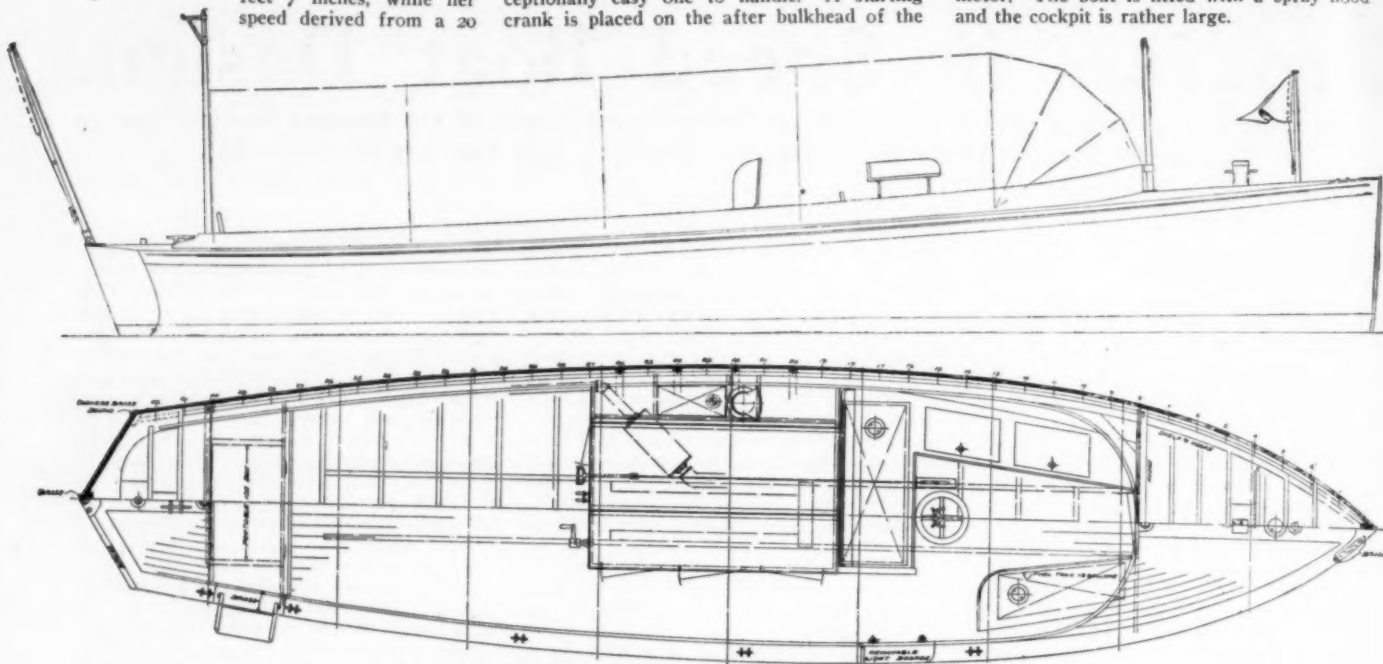
America, one of the candidates from our B. I. T. team, was a hull of this type, driven by two twelve-cylinder, $5\frac{1}{2}$ " x 6" motors, connected direct to two surface propellers. But this boat being the first of its kind as regards size and power, required considerable experimenting with before the best results were obtained from her, so that she was not perfected in time to go abroad for the races.

A Well Proportioned Runabout.

A PLEASING 30-foot runabout is that designed by Swasey, Raymond & Page, of Boston, Mass., and shown herewith. The boat has a beam of 6 feet 10 inches, and a draft of 2 feet 7 inches, while her speed derived from a 20

h.p. four-cylinder motor placed amidships is 12 miles per hour. The motor which is housed over can be controlled from the automobile steering wheel forward or from the side steering apparatus aft, making the boat an exceptionally easy one to handle. A starting crank is placed on the after bulkhead of the

engine compartment, so that it is not necessary to leave the cockpit for starting and controlling the motor. Two 15-gallon fuel tanks are disposed forward on either side and a 30-gallon tank is placed just forward of the motor. The boat is fitted with a spray hood and the cockpit is rather large.



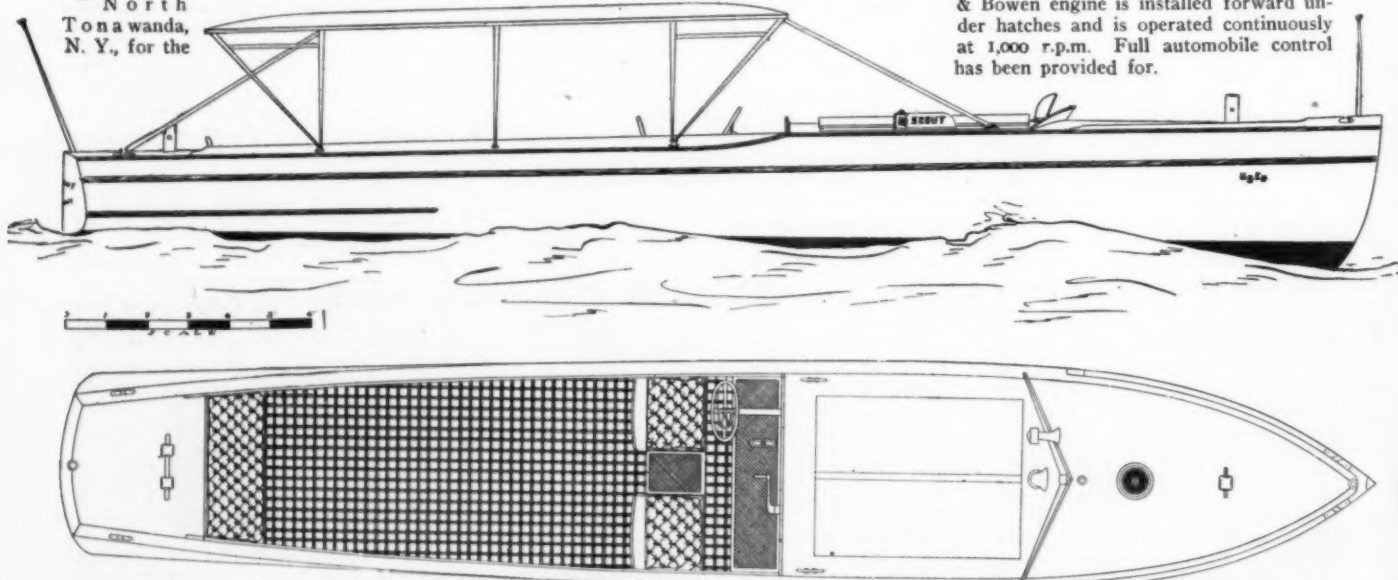
A pleasing 30-foot runabout which is exceptionally easy to handle.

A Government Inspection Boat.

THESE plans show a 19-mile Inspection Boat built by the Niagara Motor Boat Co., North Tonawanda, N. Y., for the

U. S. Government Engineer Corps. The appearance is that of a raised deck runabout,

but the construction is unusually heavy to withstand hard usage. Its 40 h.p. 4-cycle Fay & Bowen engine is installed forward under hatches and is operated continuously at 1,000 r.p.m. Full automobile control has been provided for.



A raised deck runabout, the construction of which is unusually heavy to withstand hard usage.

A Speedy 40-Footer.

THE plans shown on the next page depict a high-speed runabout designed by E. Drolet, of Park Laval, P. Q. This

runabout, which has been in service some time, and which is equipped with a Buffalo motor is typical of the styles prevalent at this time in Canada. The hull is long and narrow, being

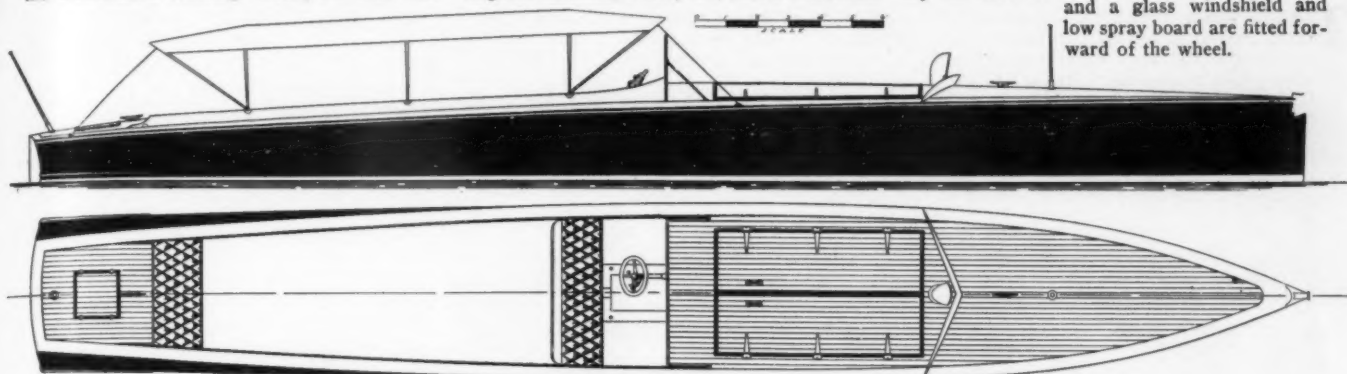
40 x 5½ feet, and the cockpit is spacious enough to accommodate three or four easy chairs in addition to the fixtures, consisting of a rear transom and helmsman's seat, holding

Hydros and Runabouts.

the operator and two extra persons. The motor is carried forward under hinged hatches and the reversing gear is brought back beneath the automobile steering wheel, so that the

craft is easily controlled from the steersman's seat. The gasoline tank is carried under the forward deck, where there is also room for the disposal of tools, waste, etc., and a removable

hatch in the after deck gives access to a hold-all locker and the tiller. The cockpit is protected by an automobile type canopy, and a glass windshield and low spray board are fitted forward of the wheel.



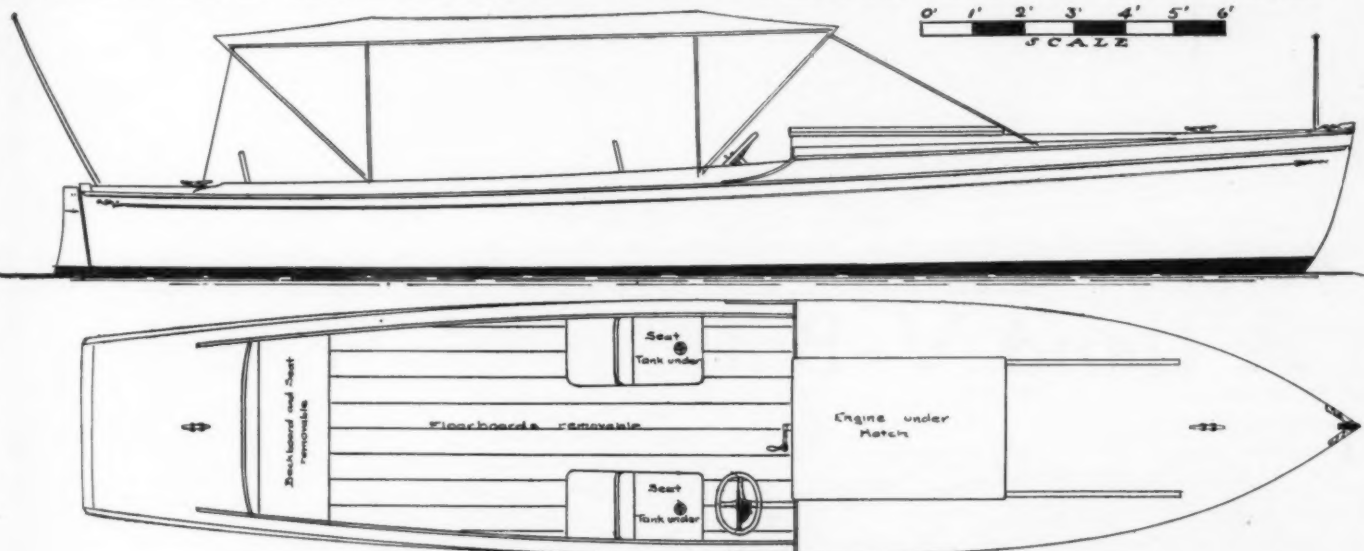
The engine is forward under hinged hatches and the cockpit is large enough for several chairs.

Ruth II, a 25-Foot Runabout.

RUTH II, a 25 x 5 foot runabout, was designed by Sam Brown, of Marblehead, Mass., and built by Andrew Wheeler, of Annisquam. Plenty of lumber

and fastenings were used, so that she will last a lifetime, and in spite of her heavy construction she has been able to give most of the speed boats her wash. The engine, an 18-25

h.p. Sterling, is forward under a sliding hatch. The cockpit is left open save for a seat across the after end and two side seats forward on the starboard, one of which the helmsman sits.



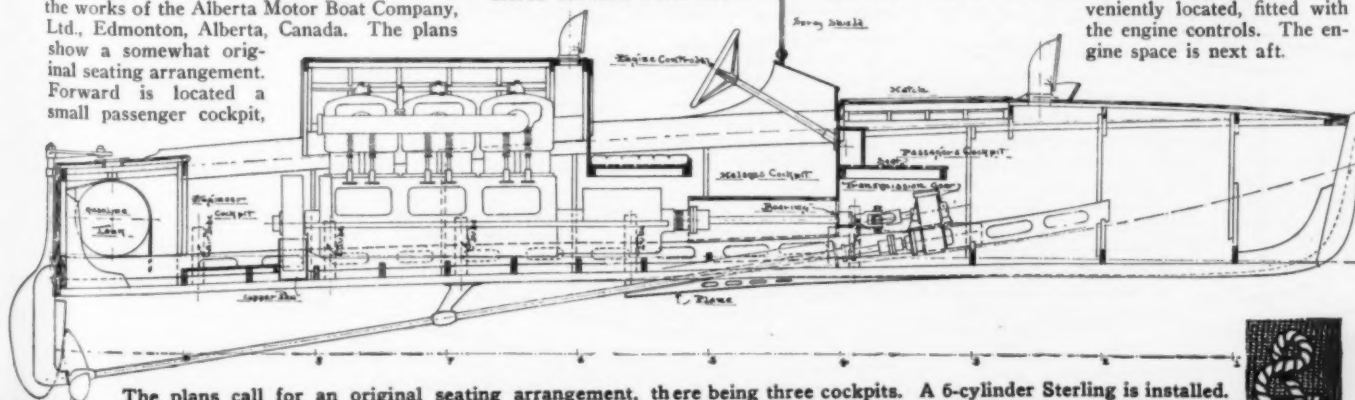
Plenty of lumber and fastenings were used in her hull, so that she will last a lifetime.

An Able Hydroplane Runabout.

THE accompanying plan shows a 20-ft. hydroplane runabout designed by William Edgar John, of Philadelphia, for a Canadian client, which is now under construction at the works of the Alberta Motor Boat Company, Ltd., Edmonton, Alberta, Canada. The plans show a somewhat original seating arrangement. Forward is located a small passenger cockpit,

seat being arranged over the transmission. This cockpit is covered with a very light removable hatch which can be stored forward when not in use. This

hatch comes in very handy when racing or when driving the boat in bad weather. Aft the passenger cockpit is arranged the helmsman's. An automobile steering wheel is conveniently located, fitted with the engine controls. The engine space is next aft.



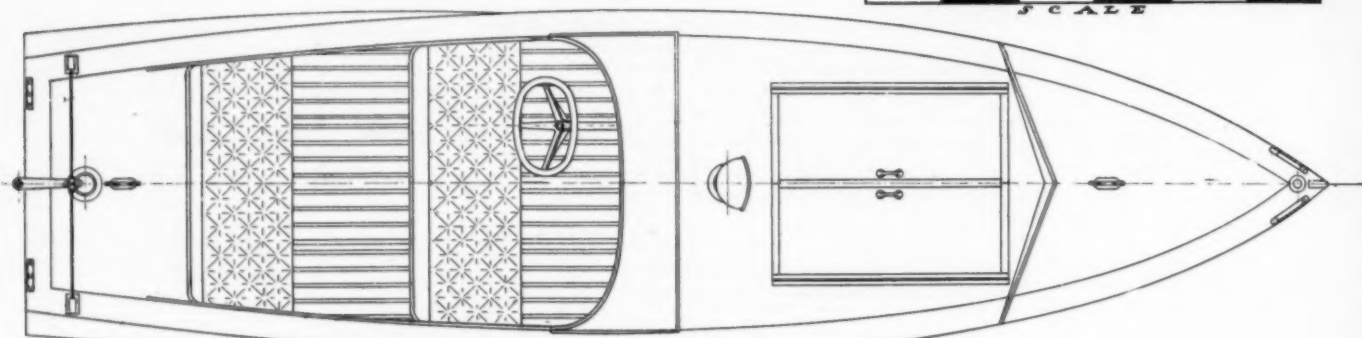
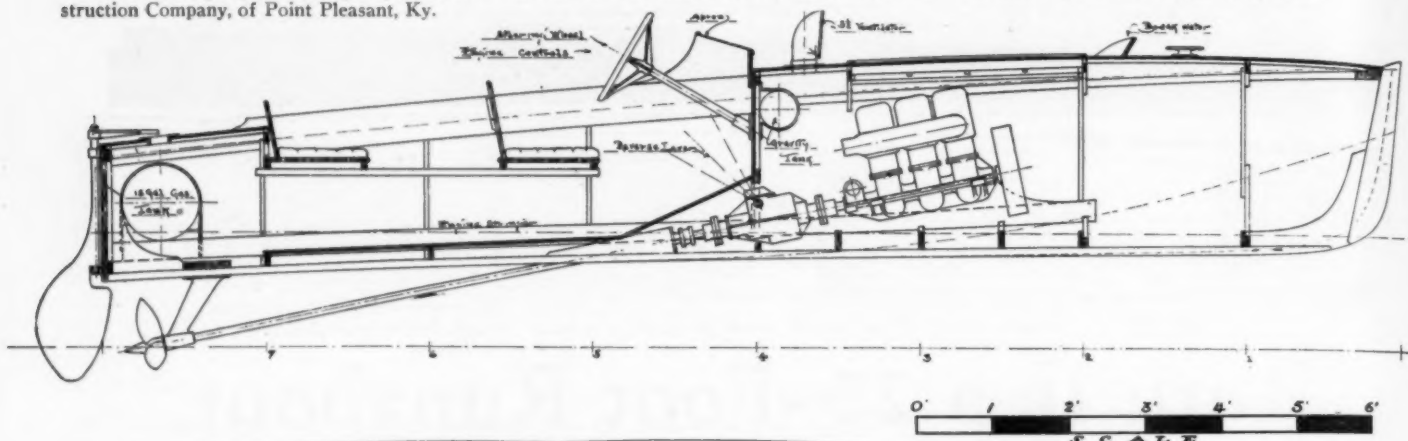
The plans call for an original seating arrangement, there being three cockpits. A 6-cylinder Sterling is installed.

A 17-Foot Stock Hydroplane.

THESE plans show a small hydroplane runabout, designed by William Edgar John, of Philadelphia, for the Hydroplane Construction Company, of Point Pleasant, Ky.

It is to be a stock model, and built and sold in all stages of construction. The 3-cylinder Roberts motor is located forward, and controls are

carried to the automobile type steering column. The boats are constructed of the finest material and have a guaranteed speed of 25 miles.



A small hydroplane runabout which will have a guaranteed speed of 25 miles.

A Hand V-Bottom 15-Footer.

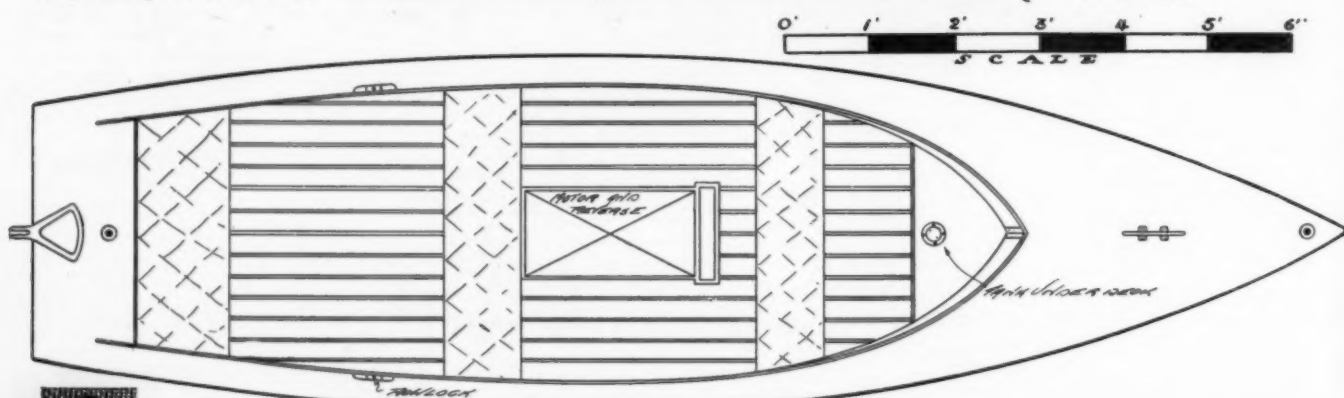
THE plan and photograph appearing herewith show a very successful little 15-footer of the Hand V-bottom type, built during the past summer by William H. Hand, Jr., of New Bedford, Mass., for harbor and river use in the vicinity of Buzzards Bay.

This little boat has proven highly successful, and is a very handy little craft for average purposes. The draft is very light and the V sections show comparatively little deadrise,



making the boat unusually steady for so small a craft, although the V sections provide sufficient deadrise to insure easy action and good abilities in comparatively rough water.

The motor, which is installed amidships, is a 3½ h.p. Eagle and drives the boat at a speed of about 8½ miles under service conditions. Three seats are fitted, one forward and two aft of the engine space. The gasoline tank is located under the forward deck.



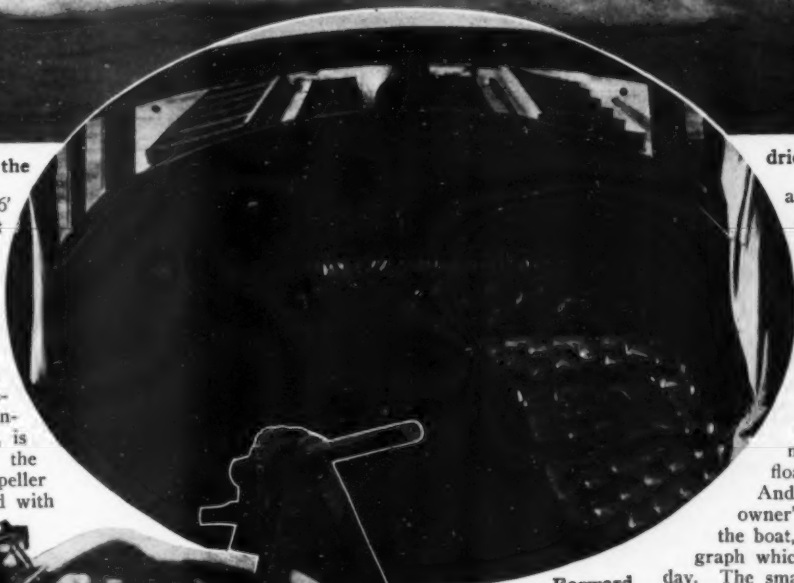
A little craft which has proven very handy for all average purposes.

Anahma, a 30-Foot Tender.



The owner's cockpit is the

ANAHMA, a 30' x 6' high-speed yacht tender, was designed and built by the Atkin-Wheeler Company, Huntington, L. I., for Mr. August Heckscher, of New York City, for use on his steam yacht Anahma. The motor, which is an 8-cylinder Achilles of 100 h.p., is located in the stern of the boat and drives its propeller through a gear box fitted with



Forward end of the cabin.

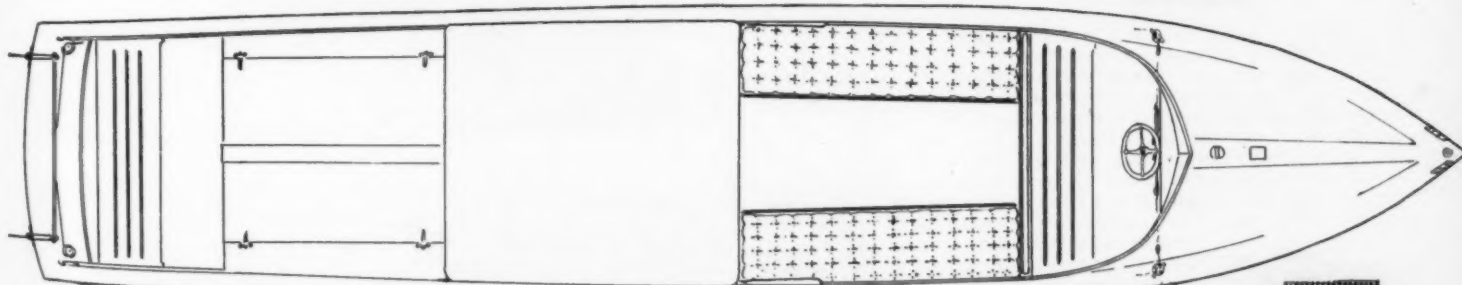
driest part of the boat.

a double helical gear, which has proved to be practically noiseless. By placing the motor aft, the middle and forward portions of the boat are left for the owner and guests. The steersman is located in a small cockpit forward, and the engineer way aft. By this arrangement there is a man at each end of the boat, which is quite necessary when making a landing either at the float or the gangway of the yacht. And what is more important, the owner's cockpit is the driest part of the boat, as can be seen by the photograph which was taken on a very stormy day. The small cabin gives shelter in rainy weather, and also gives individuality to the boat.

The speed is over 25 miles an hour, and this can be kept up in very bad weather, while the maneuvering qualities of the boat are excellent—which is quite necessary for boats of this type. The construction and finish of the boat is of the best.



The 8-cylinder Achilles motor.



The layout consists of a helmsman's cockpit forward, the owner's cockpit, his cabin, the engine compartment, and the engineer's cockpit.



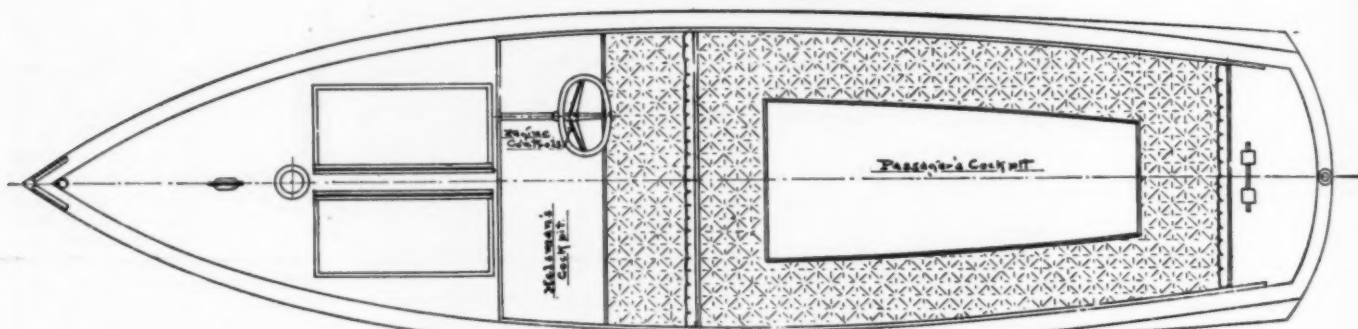
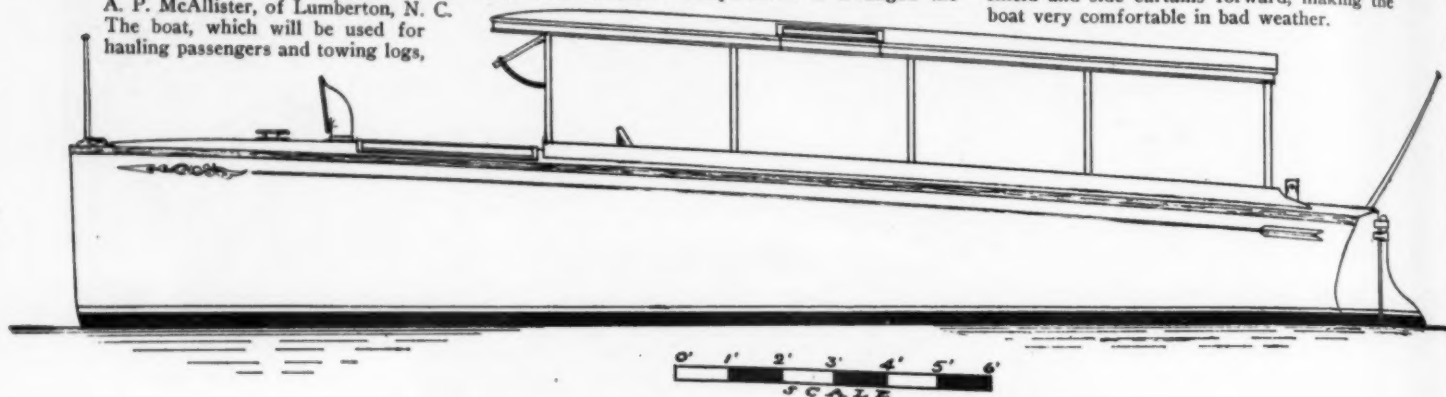


A Tunnel-Stern Runabout.

THIS shoal draft 25 by 6-foot 6-inch runabout for use for both pleasure and commercial purposes was designed by Wm. Edgar John, of Philadelphia, for Mr. A. P. McAllister, of Lumberton, N. C. The boat, which will be used for hauling passengers and towing logs,

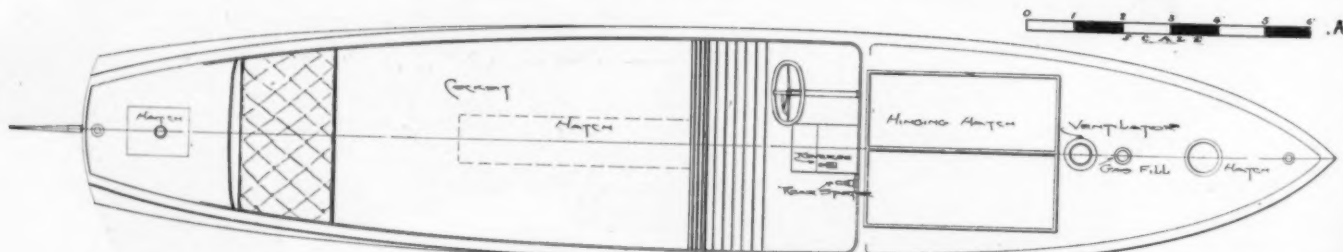
is powered with a 4-cylinder $4\frac{3}{4}$ x 5 inch motor located forward under a removable hatch, which will give her a speed of 12 miles. Next aft the motor compartment is arranged the

helmsman's cockpit, separated from the passenger cockpit by a bulkhead. The boat is covered with a standing top fitted with swinging spray shield and side curtains forward, making the boat very comfortable in bad weather.



A 25-footer with 18-inch draft which will be used for hauling passengers and towing logs.

A 12-Inch-Draft 26-Footer.



A shoal-draft runabout designed for the government.

THE plans herewith show a shoal draft runabout of rather interesting type designed for the Government by the Matthews Boat Company, of Port Clinton, Ohio. The boat is 26 feet in length by 5 foot beam, and has a draft of only 12 inches. This slight draft has been obtained by running the propeller in a tunnel. A 40 h.p. motor is arranged under the hood forward and is accessible through a hinged hatch. Spark and throttle controls are brought to the automobile type steering wheel, and the reverse clutch is

at the helmsman's right hand. A rear-starting device is brought through the engine compartment bulkhead. The operator's seat accom-

modates two people, and aft of this is a large owner's cockpit fitted with a divan seat aft and having space for four chairs.



Wanderlust, a 30' x 5' 3" runabout designed by the Matthews Boat Co., Port Clinton, O., and powered with a 30 H. P. Sterling engine.

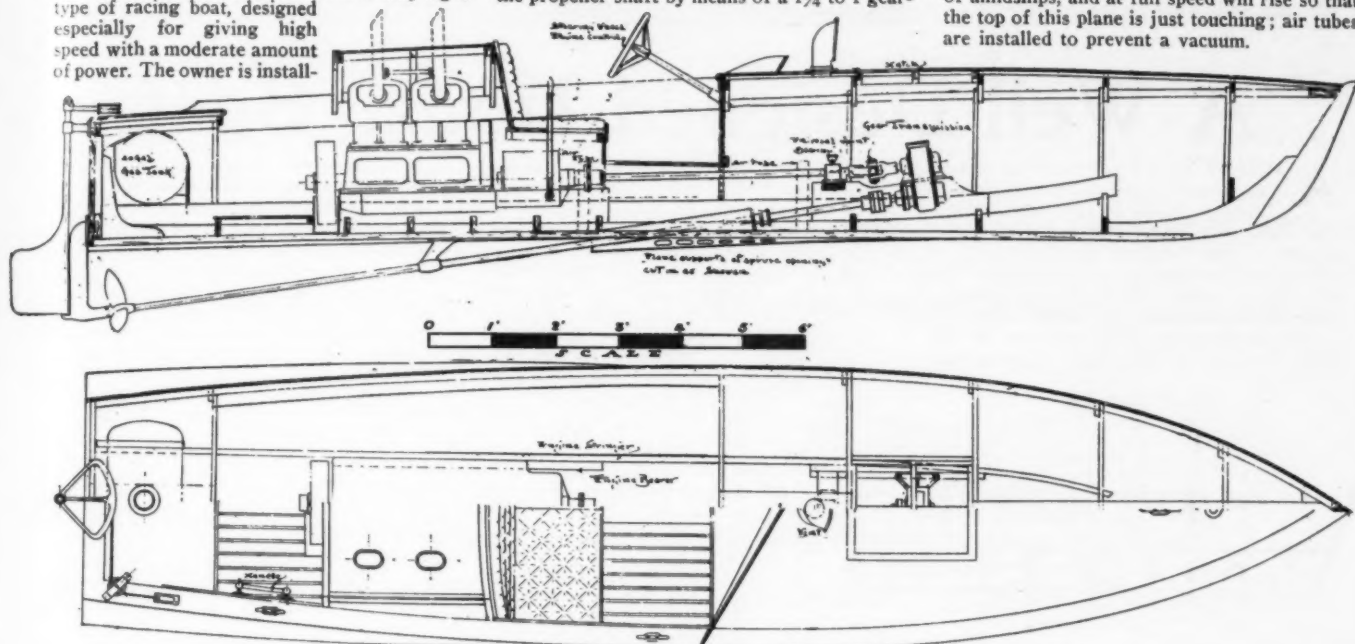


A Light Single-Step Hydro.

THIS 20' x 4' 6" hydroplane was designed by J. Murray Watts, of Philadelphia, for Mr. Herbert Beerman. It is a very light type of racing boat, designed especially for giving high speed with a moderate amount of power. The owner is install-

ing a light, 4-cycle engine, which develops 41 h.p. at 1,500 r.p.m. The engine is well aft and drives the propeller shaft by means of a 1¼ to 1 gear-

ing placed forward of the helmsman's cockpit. The boat has a single plane, ending a little aft of amidships, and at full speed will rise so that the top of this plane is just touching; air tubes are installed to prevent a vacuum.

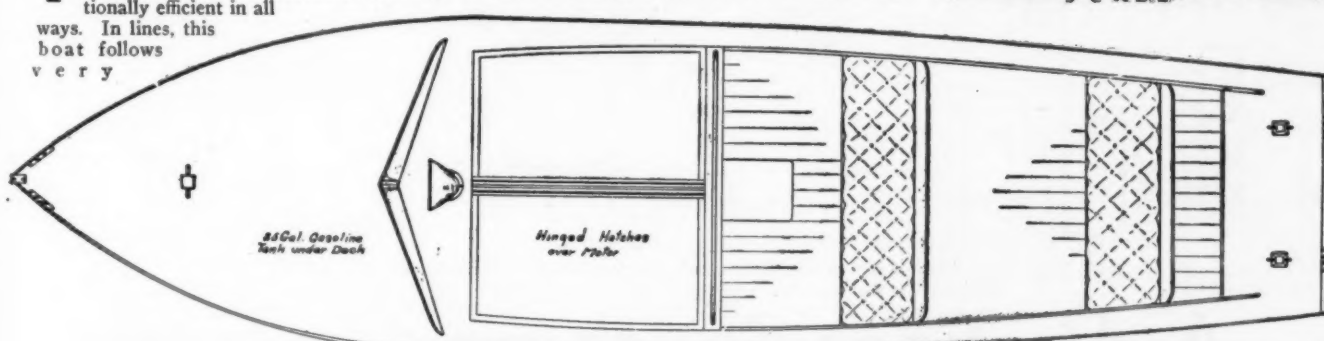


At full speed she rises so that the top of her single plane is just touching.

A V-Bottom 21-Footer.

THIS is a very attractive and interesting little boat, which has proven to be exceptionally efficient in all ways. In lines, this boat follows very

closely the plans of Piute III, and Old Glory II, the remarkable 24-footer built from Mr. Hand's



The hull is amply strong for all ordinary racing.



Powered with a 20 H. P. motor she makes over 18½ miles under service conditions.

plans by George P. P. Bonnell, of New York, who made the run from New York to Digby and return, which was fully described in MoToR Boating of last December and January. This 21-footer possesses all of the features and qualities of the 24-footers in reduced size, and has shown splendid abilities under all conditions.

This design, made by William H. Hand, Jr., of New Bedford, Mass., shows a very trim and wholesome little runabout with raised freeboard forward and hinged hatches over motor compartment, which are sufficiently rigid to allow of the heaviest man walking forward over them without strain, and is of the designer's simplified longitudinal construction system of framing and planking, which can be handled by an amateur builder much more easily than the usual bent frame type.

This boat has shown surprising speed under all conditions, and with a motor developing 20 h.p. is capable of more than 18½ miles.

· SHOAL DRAFT CRUISERS · · and MOTOR HOUSE BOATS ·

A Well Designed House Boat.

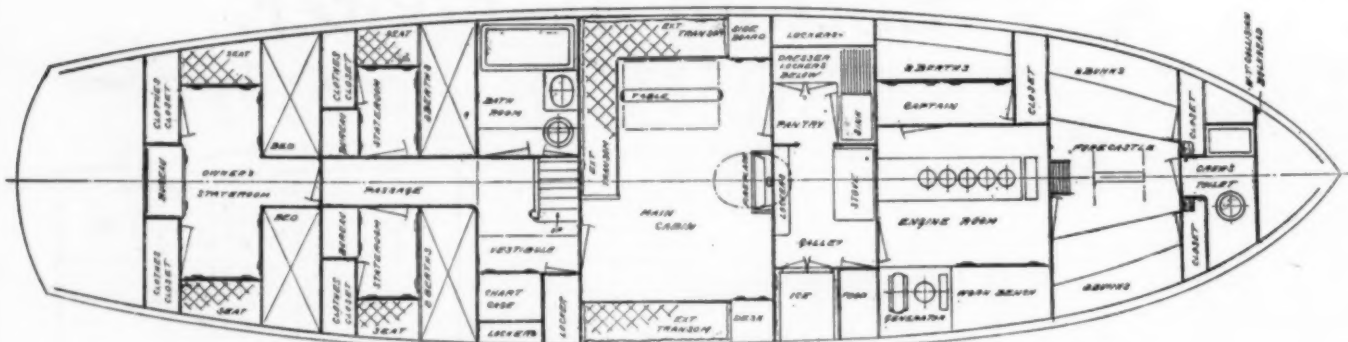
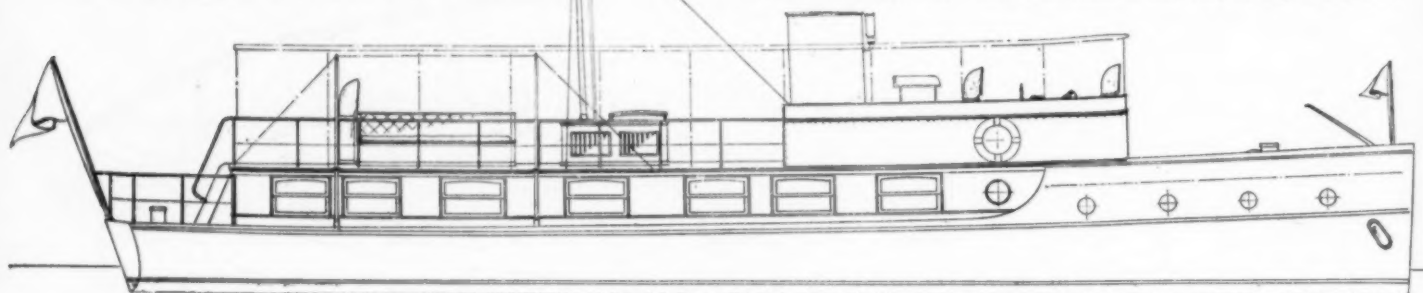
A MOTOR house-boat which has unusual accommodations has been designed by Swasey, Raymond and Page, of Boston, Mass. Her length is 65 feet over all, and 63 feet on the waterline; she has a beam of 18 feet, and her draft is 3 feet 3 inches. With a 60-70 h.p. engine installed she is expected to make about eight miles per hour.

Her arrangements below deck are as follows: Forward of watertight collision bulk-

head is a chain locker, and aft of the bulkhead the crew's toilet, followed by the forecabin, with accommodations for four. The engine-room is next, fitted with electric plant, work bench, etc., and encroaching on the port side is the captain's stateroom. Aft is the galley, which with pantry extends the full width of the boat. The

main cabin, fitted with fireplace, transoms, table, etc., follows, and is followed by the vestibule and bathroom. On either side of a passageway extending to the owner's stateroom at the extreme aft are twin staterooms fitted with double berths placed athwartships, etc. The owner's stateroom has two full width beds, seats, lockers and bureau.

A companionway aft of the saloon leads to the deck, which is also very roomy as laid out.



A 65-foot motor house boat in which unusual sleeping accommodations are obtained.

A 46-Foot Southern Cruiser.

THE accompanying design of a 46 x 11 foot cruiser is by William J. Deed, Jr., of Boston, Mass., for a Jacksonville, Fla., owner who has owned four other Southern cruisers and knows the requirements for those waters. While every man has his ideas as to what a boat should be and this design may seem "way off" to some, yet it embodies points that have been tried and found necessary for Florida. Prospective owners of boats for these waters should take note of some of them.

To some a raised deck forward would look better, but it was not "appearance" that was sought, but service, and that implies that there must be considerable house above deck to get sufficient ventilation below. A Patterson ventilator with four windows and six hinged ports, together with the companionway, offers exceptional ventilation to the stateroom, which, by the way, is in the bow where the best air is found in a boat at anchor in a hot climate.

Over the 150 gallon gasoline tank forward is a square hatch

with a ventilator cowl so that danger from gasoline fumes will be reduced to minimum, as a current is carried through the bilge, too. Between the tank and the toilet-room as well as between the stateroom and the engine-room are water and gas tight bulkheads.

There is full headroom in the engine-room under the bridge deck at the forward end where the hatch to engine-room is located. The ladder lands one beside the flywheel, within reach of the reverse and controls, while control of boat, engine, and reverse are had at the wheel on deck. All the gasoline supply valves are near the engine, a 35 h.p. heavy duty machine, which is very accessible. This motor will drive her 10 miles an hour in a seaway and nearly 11 in the Florida canals and rivers. A 75 gallon fuel tank is on the starboard and a 150 gallon tank on the port side.

Above the motor is a large bridge with seats and plenty of space for comfortable chairs. From the helmsman's position one can easily distinguish the shoals and buoys. A double awning protects the party from the sun. Ventilation to the engine-room is had through four

hinged ports, the hatch, and two cowl ventilators. From the bridge one may go forward to the stateroom or aft into the very large galley and thence into the saloon. To attain an absolutely ideal Southern cruiser one would rather have the galley located way aft, but to arrange it this way in this boat would be impossible without making the boat 5 feet longer, if a saloon the same size were to be had. With the companionway, a large Patterson ventilator, and effective window ventilation the galley will be cool.

A 9 foot saloon with companionway to the after deck provides the living room of the boat and two berths can be made up at night for guests. A full length clothes closet, buffet with china closet, and suitcase stowage are to be noted.

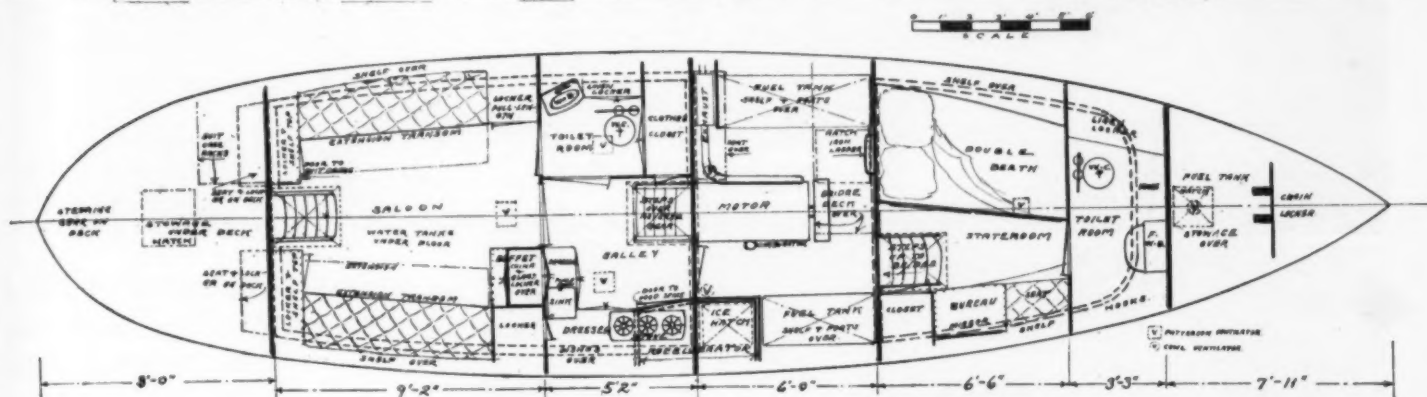
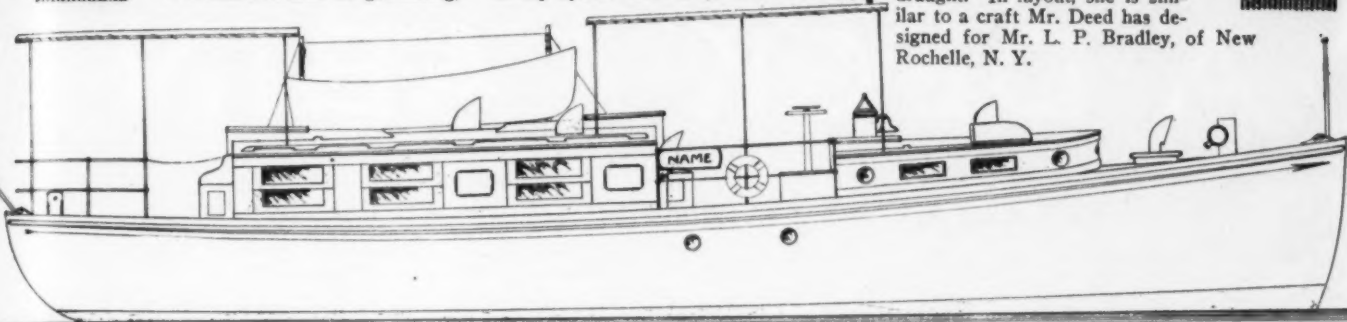
The windows in the saloon are designed for Florida service; all decks are covered with awnings; all openings screened, and the underbody coppered. She will be planked

Shoal Draft Boats.

with hard pine, copper riveted. The construction is planned to withstand strains of grounding,

etc., and the lines are drawn so that she will not increase draught when running at top speed. She is 46 feet over all;

41 feet, 10 inches waterline; 11-foot beam, and 30-inch draught. In layout, she is similar to a craft Mr. Deed has designed for Mr. L. P. Bradley, of New Rochelle, N. Y.



A Southern cruiser in which proper ventilation of all compartments has been a prime consideration.

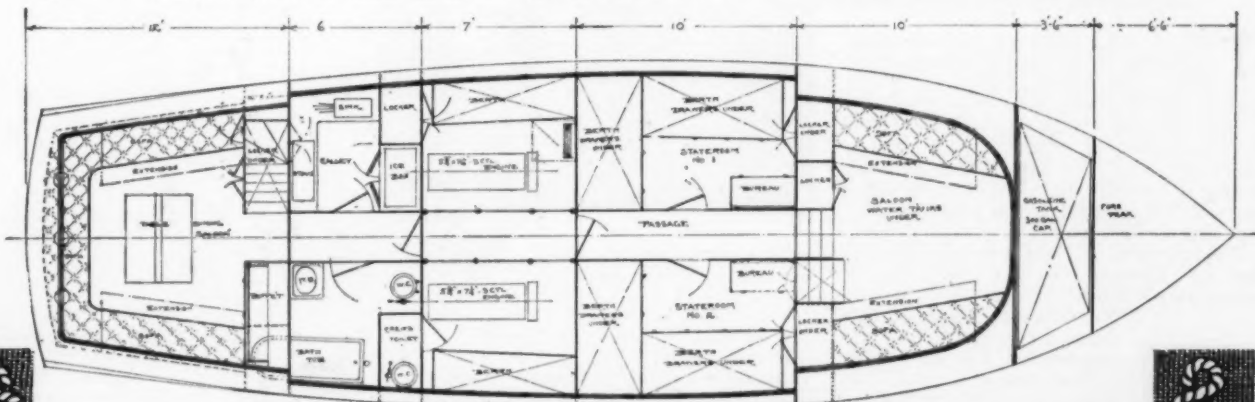
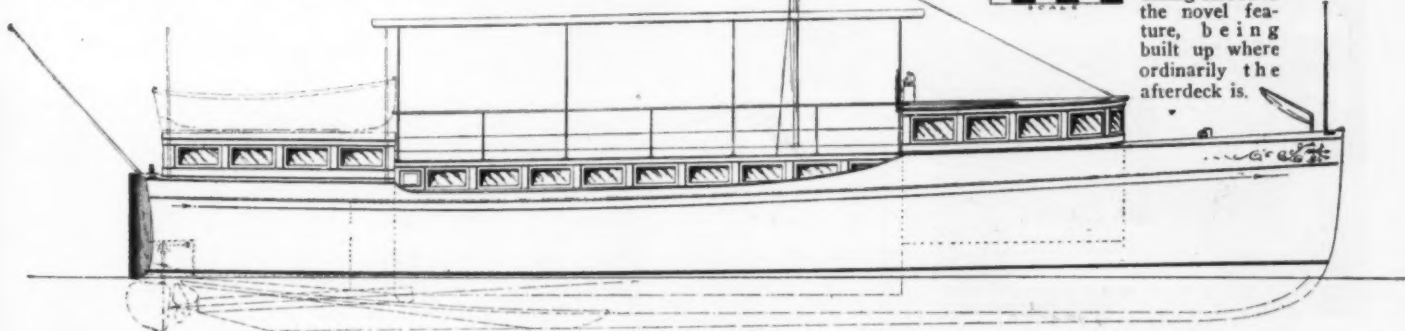
A Novel Shallow-Draft Cruiser.

A NOVEL, shallow-draft cruiser 55 feet in length, with 16-foot beam, and 2-foot 6-inch draft, is shown herewith, designed by the New York Yacht, Launch and Engine Company at Morris Heights for a New York yachtsman. This boat is laid out with

raised pilot house forward, having two extension berths on passage leading from the pilot house to the dining saloon aft, and on each side of the passage aft of the pilot house is a state-

room containing two built-in berths. The engine-room is just aft of amidships with one 3-cylinder, 18-23 h.p. Twentieth Century motor on each side. A galley and bathroom are opposite each other, both complete with full

equipment. The dining saloon is the novel feature, being built up where ordinarily the afterdeck is.



The dining saloon is built up where ordinarily the after deck is.

A DECK-C'A'BIN



Oasis is now on her way to Miami.



In the large saloon, forward, looking toward the engine room.

THE houseboat Oasis has just been delivered to Mr. E. H. Lyon by the New York Yacht, Launch & Engine Co., of Morris Heights, and is now on its way to Miami.

Oasis is an interesting boat and she will be used extensively in Florida waters. She is 52 ft. overall by 14 ft. beam and 30 in. draft, having a tunnel stern. This boat is single screw and is equipped with a 4-cylinder 40-50 h.p. 20th Century motor.

The interior of this boat is very comfortably laid out. Forward there is a large saloon in which there is a berth on each side; a writing desk forward and a piano. This makes a very comfortable living-room on bad days when the deck cannot be used. The balance of the boat is laid out

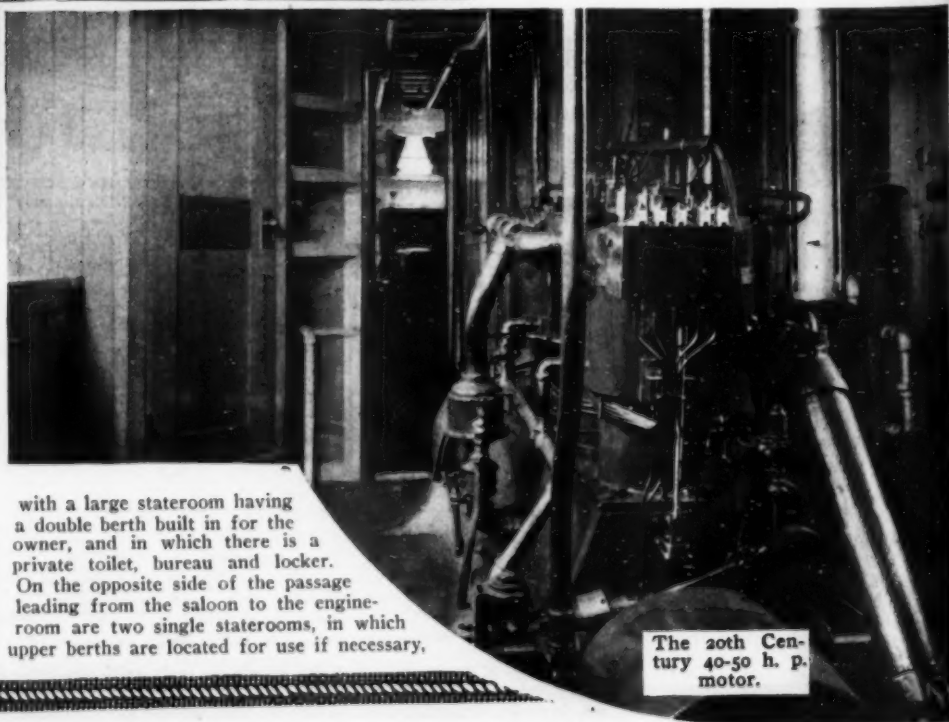
with a large stateroom having a double berth built in for the owner, and in which there is a private toilet, bureau and locker. On the opposite side of the passage leading from the saloon to the engine-room are two single staterooms, in which upper berths are located for use if necessary,

**A House Boat With Tunnel
An Interior Arrangement Com
What Experience Has**

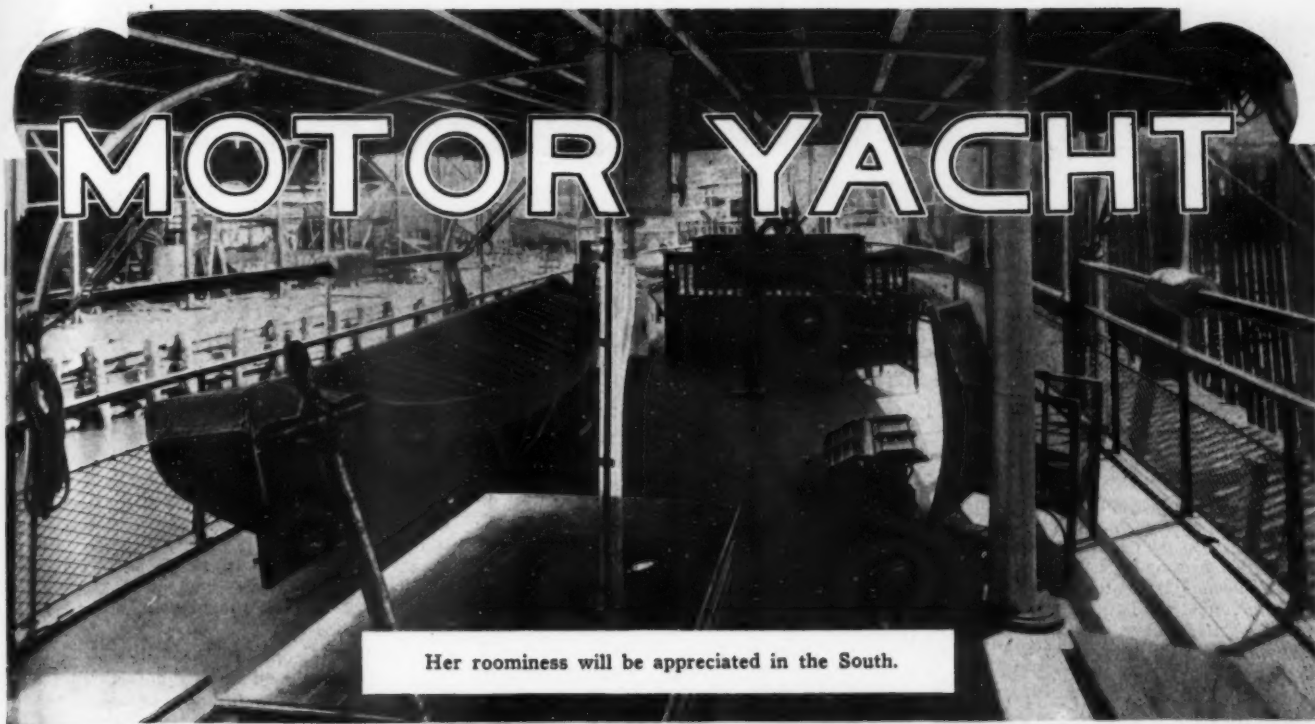
Principal Specifici

Length Over All.....	
Beam	
Draft	
Motor	
Horsepower	

and when not in use are standing down out of the way. A maid's room is worked in on the starboard side aft of the owner's



The 20th Century 40-50 h. p. motor.



Her roominess will be appreciated in the South.

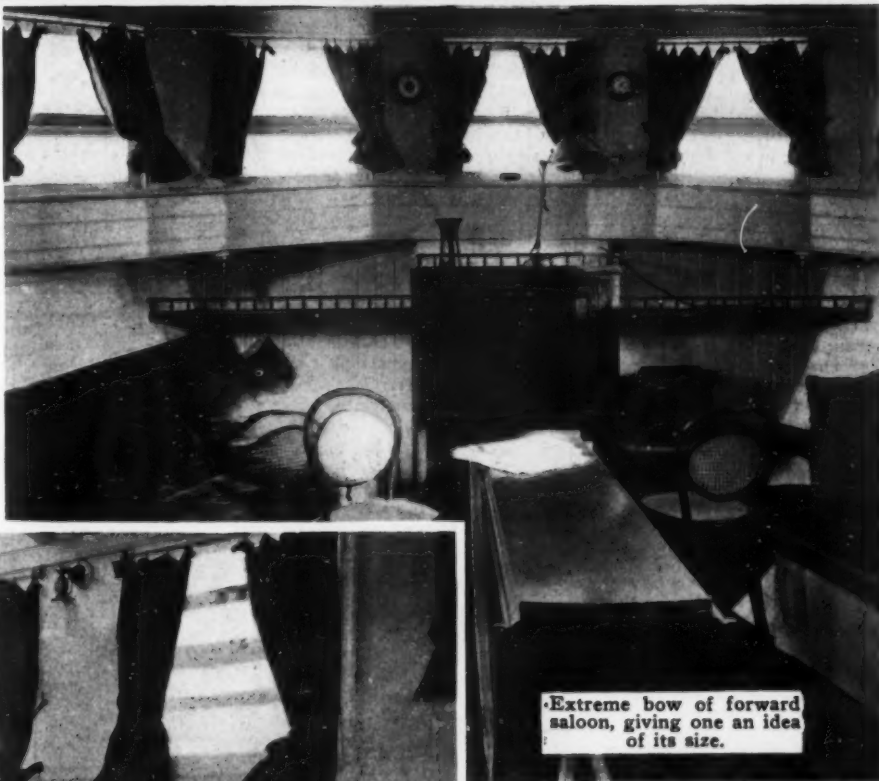
Stern for Use in Southern Waters.
 Giving Comfort and Convenience.
 Taught One Owner.

Dimensions of Oasis.

.....52 feet
14 feet
30 inches
Four-cylinder, Twentieth Century
40-50

stateroom, and is complete with single berth
 for maid.

The toilet is fitted with Curtiss "4" patent



Extreme bow of forward
 saloon, giving one an idea
 of its size.



An attractive
 corner of the
 forward saloon.

pump closet and folding mahog-
 any wash basin. The engine-room,
 in which on the starboard side is
 located the galley, takes up the bal-
 ance of the boat, and is complete in
 every detail with work bench, direct con-
 nected generating set and water heating plant,
 the boat being heated by hot water.

The galley is complete with large built-in
 icebox, sink, shelves, dish racks and a Mascot
 coal range with a range boiler on deck. The
 crew's quarter is an extension of the main
 house and contains upper and lower berth.
 The engine-room also contains crew's toilet.
 The main deck of this boat is covered entire-
 ly with awning with a rail all around. The
 boat is steered from the bridge forward.

Mr. Lyon has spent a great deal of time in
 planning Oasis, and expects to get a great
 deal of service out of this houseboat in Flor-
 ida, as he will be able to go places where the
 larger boats cannot go.

The matter of providing a
 sufficient circulation of air in
 the living quarters has been
 well attended to.



STOCK MOTOR BOATS

Standardized Motor Boats.

The Benefits Accruing to Both Buyer and Builder Through the Boat of "Stock" Design.
A Word on the Experience of the Past and of Hope for the Future.

By Henry R. Sutphen.

THERE is probably nothing which interests the great number of people who expect some day to own a boat more than the advances that are made from year to year in the development of the stock boat. Both the manufacturer and the buyer are aware of the fact that a better boat at a lower price can be manufactured in quantity than by building one at a time. This is particularly noticeable in the smaller motor boats and cruisers up to 50 feet in length.

The companies that have given the closest study to the stock boat proposition have realized that the tendency to specialize in some particular line of manufacture is most noticeable in other lines of production and should apply in the motor boat business; and more companies will recognize the importance of this class of work in the future and will develop a boat characteristic in design and construction, in which they can excel in manufacturing, due to the location of their plants and physical conditions of their shops.

If the plan of building stock boats were practiced by more manufacturers it would be a great benefit to the motor boat industry, thereby placing it on a more substantial basis and lowering the cost of boats, which would materially increase their sales and add large numbers of motor boat owners year by year.

The limited amount of business that motor boat manufacturers have found in particular sizes of boats in which they specialized has discouraged many in developing a stock line of motor boats.

This limited field in the past can be accounted for by the fact that many boats and engines which were placed on the market did not come up to expectation, and thus their purchasers be-

came discouraged and dissatisfied with their boats, and to such an extent that they sold them at a great sacrifice or got rid of them in the best way possible.

The automobile and motorcycle business has undoubtedly retarded the growth of the boat business somewhat, but as the automobile business becomes more and more in use it will eventually result in being a necessity to those who can afford it. It has, however, performed a service to the motor boat industry in that it has educated thousands of people in the use and handling of machinery, and this will result in the better care of and attention to the engine in the motor boat, two factors which play an important part in successful use.

Automobiles are not the cheapest form of conveyance that can be bought, and the average purchaser of an automobile rarely appreciates the expense of maintenance and operation. The purchaser of a motor boat will find the first cost of his boat about the same as an automobile, but he will be agreeably surprised by the low cost of maintenance and operation of the motor boat, as compared to the automobile. The motor boat has not the fuel and tire expense or the incidental expenses which amount to a high figure in automobiling when any entertaining is done. The modern cruiser permits of entertaining in the most inexpensive way, and, with a handy cook on board, a table can be set that would satisfy a king. Not only is the saving made in the table, but living quarters, are provided with comfortable berths that could not be procured under \$5 per day on shore.

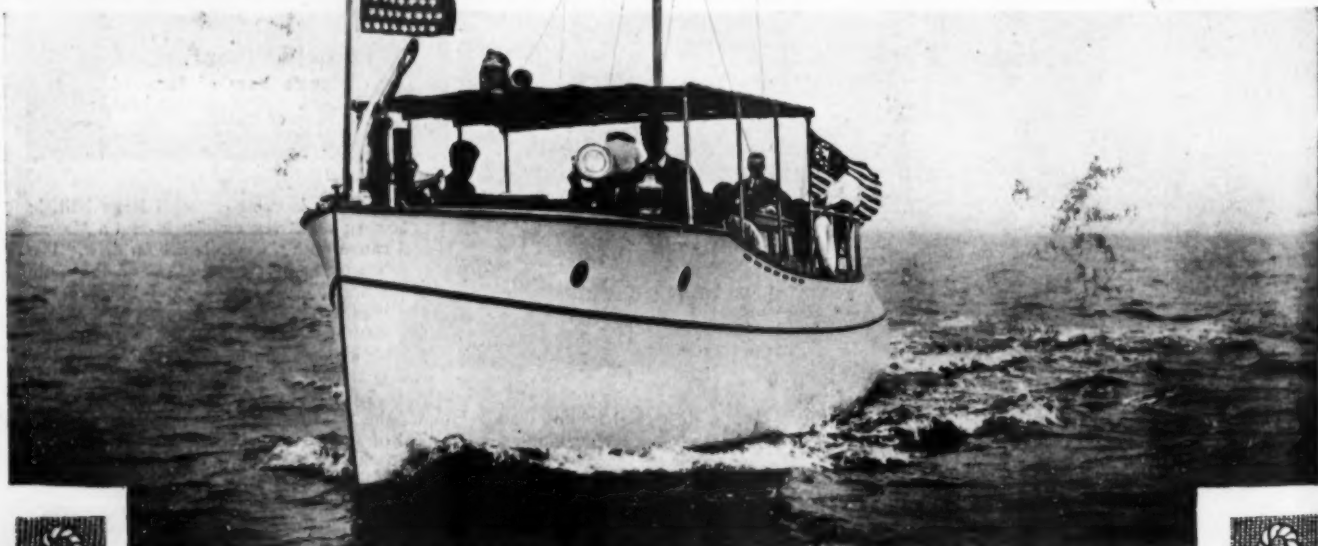
In comparison with the automobile, the motor boat, in many localities, cannot be used twelve months in the year; but in nearly every place the boat season lasts for at least six months, during which time the greatest amount of pleasure for the least amount of money can be obtained from a motor boat.

Advertising men who try to stimulate railroad travel freely admit that nothing equals the attraction that water always affords at pleasure resorts, and this becomes more and more noticeable in the folders which are used for advertising various pleasure resorts, where, in the foreground, a boat or canoe is given a prominent position in the advertisement.

The future for the motor boat appears very bright, and it is hoped that the manufacturers will take advantage of the increasing demand for high-grade, low-priced boats. If the good boats are offered at reasonable figures buyers will be found. Heretofore it has been very difficult for manufacturers to decide on the types of boats for which they could most readily find markets, and this is a great problem for every one to meet in considering the building of stock boats.

There is no question but that the general design, construction and equipment of motor boats have been greatly improved in the last few years, due to the experience derived from the boats that have been built and placed in the hands of the public, and with this experience at hand a manufacturer has no excuse to-day in furnishing an inferior boat.

The amount of available seating space in a small boat, or sleeping accommodations for a cruiser, is well established, and the public is less inclined today to criticize the designs in these respects than ever before.



The 36-foot standardized Elco raised deck cruiser with two cylinder 6 x 8 inch Standard motors. Speed, 9 miles per hour.

Stock Motor Boats.

A Steel 21-Footer.

The Robinson Motor & Steel Boat Works, of Lindsay, Ont., Canada, are in a position to make deliveries on their standard model 21-foot steel runabout with 4-foot beam. This craft is constructed of 18-gauge steel, and all complete with cushioned seats and backs sells for \$250 for the hull only. Complete with two-cylinder engine, reverse gear and under water exhaust the price is \$500.

Barrett Boats.

The Dick Barrett Boat Building Company, of Muskegon, Mich., build mostly to order, but have standardized their 26-foot semi-speed boat, and are able to turn these out in large quantities at a low price. This boat provides exceptionally large accommodations and is able to stand any ordinary sea. It is of the displacement type and built of mahogany throughout and fitted with a 50 h.p. Vim motor, which gives it a speed of 26 miles per hour. 9/16 inch planking is used and the ribs and keel are of selected oak, and the boat sells complete for \$1,500.

Two Eldredge Boats.

The Albert E. Eldredge Corporation, of New York City, have produced from the board of Morris M. Whitaker, a 20-foot hydroplane which sells for \$1,200, and which, it is claimed, will plane at all speeds. The design and construction show many novel features, particularly that of the under body which admits air to the bottom of the boat, giving less resistance and greater speed, making it unnecessary to sacrifice comfort and seaworthiness to obtain speed. The framing of this boat is of oak, and the planking cedar. The side plank is laid smooth, but the bottom is lapped, giving strength, and preventing side skidding by imprisoning air underneath the boat as she planes. This hydroplane is powered with an Erd featherweight 2-cycle, 30 h.p. engine, weighing 250 pounds. Another boat produced by this firm is a 16-foot Nantucket dory which has a beam of 4 feet 8 inches and a draft of 16 inches. The planking of this little craft is 3/4 clear cedar fastened with best galvanized boat nails to the oak timbers. The decks are of selected 3/4 inch cypress, laid in 2 inch widths and caulked. The steering wheel, rudder and tiller are of best galvanized iron. The power plant is a Fulton self-sparking engine rated at 3 1/2 h.p., but capable of developing considerably more than this. The price of this dory complete is \$250.

Four Racine Stock Models.

The Racine Boat Co., Racine, Wis., are specializing this year on four stock models, as follows: A 15-foot Special, a 19-foot Semi-speed Special, their 19-foot Racine Special, and their 23-foot Racine Special. The last of these, the 23-footer, has a beam of 4 feet 6 inches, is an excellent sea boat, sound and substantial, and a craft the makers recommend for open as well as protected waters. Cleanliness is insured by placing the motor forward under hinged hatches and separated from the cockpit by a bulkhead. The equipment includes the usual fittings, and complete with 12 h. p. motor having reverse gear and Bosch high tension of Splitdorf ignition system, sells for \$1,150. The 19-footer, like the larger boat, is complete as to equipment and is finished in the same high standard as the other. It is equipped with an 8 h.p. motor and is an exceptionally easy boat to handle. The price of this boat without the engine is \$660, and with the power plant, \$950. The 19-foot Semi-speed Special is designed to serve as a family boat having moderate speed, being a safe boat to handle, and being constructed of the very best material throughout. The price of this boat complete is \$671, while the 15-foot runabout, which is a very handy little boat to cruise about in, sells for \$275.

Richardson Motor Boats.

Mr. G. R. Richardson, of North Tonawanda, N. Y., has a line of stock models, but builds only to order from these models, as he has to vary designs and models to meet his customers' special requirements. Mr. Richardson also builds in any stage of construction, from the knock down frame to the completed outfit. His models include boats from 18 feet to 30 feet in length. The family boats are from 20 to 30 feet long, and the cruisers are turned out in seven models, ranging in length from 25 to 35 feet.

The Fay and Bowen 26-Foot Runabout.

The Fay & Bowen Engine Company, Geneva, N. Y., continue to produce their 35 ft. 11 in. x 5 ft. runabout which, for excellence of workmanship and completeness of equipment, can hardly be beaten. This runabout, made from designs by Morris M. Whitaker, is constructed with framing timbers of the best white oak with all frame fastenings copper or bronze; the planking is of Southern white cedar, copper riveted over copper burrs, while the plank-sheer, sheer-strake, rub-strake, decks and entire interior finish are of mahogany. All of the equipment, consisting of full salt water fittings for both engine and propeller outfit, copper, brass and bronze hardware, bronze rudder strut and steering cable, mahogany staffs with ensign, mooring lines, tank funnel, engine tools, etc., is included in the purchase price of the boat, there being no extras. The power plant consists of a 20-35 h.p. four-cylinder, four-cycle, L-type Fay and Bowen engine, fitted with automobile control, and reverse gear handy to operator, and the speed obtained from this power plant is 18 miles an hour.

A Matthews Runabout.

The Matthews Boat Company, of Port Clinton, O., offer a very attractive 30-foot runabout which is suitable for day cruising or for fast ferry service. This boat which has a beam of five feet has proved exceptionally seaworthy under all conditions and capable of maintaining a high speed in very rough water without wetting the occupant. The boat is constructed of the very best materials obtainable, and all the care and attention which is given the large Matthews motor boats is accorded this model. With the motor installed under the forward deck under hatches, where it is easily accessible for oiling, and with controls placed on the steering wheel the boat is an easy one to handle. The 30 ft. x 5 ft. 6 in. Wanderlust, shown in this department, was used during the last summer at Ballast Island, near Put-in-Bay, and was found to be a very seaworthy type of runabout for service among the Islands. She is powered with a 20-30 h.p. four-cylinder Sterling motor.

A Twenty-Five-Foot Runabout.

The Ginman Boat Company, Muskegon, Mich., find that their 25-foot runabout model is the most popular one in their line. At the present time they are making a special offer on this type, built according to the following specifications: The length is 25 feet and the beam 5 feet 4 inches. The frame is of white oak and the planking cedar or cypress with copper fastenings, while the interior finish is of oak or with mahogany at \$75 extra. The power plant consists of a four-cycle, 4-cylinder, 4 1/2 inch by 4 1/2 inch Continental self-oiling motor, with Bosch magneto, and complete with Baldridge gear, universal joint and Michigan wheel. The secondary ignition is Columbia Multiple with Heinz oil, and the boat is fitted with electric lights and Klaxon horn. The other equipment includes a Janney-Steinmetz gasoline tank, cushions, rubber on the floor, flags and poles, boathook and Pyrene fire extinguisher. The price is \$750, freight prepaid up to 300 miles. A knock down bulletin will be sent on request.

A Hurd 22-Foot Cruiser.

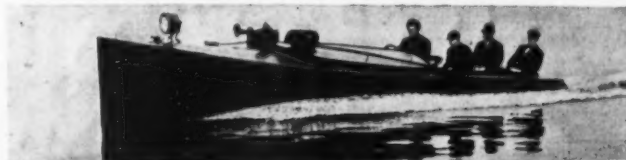
A. W. Hurd, of West Lynn, Mass., manufactures a raised deck cruising boat, 22 feet in length by 6 feet beam, which is sold complete, ready to run, for the extremely low price of \$425. The framework of this boat is of white oak and the planking of white cedar, securely fastened to the timbers. Oak and cypress finished bright are employed for the cabin and cockpit finishing. A single cylinder Baker motor with dimensions of 4 9/16 in. x 5 in. and make and break ignition is the power plant installed.

Monitor K. D. Frames.

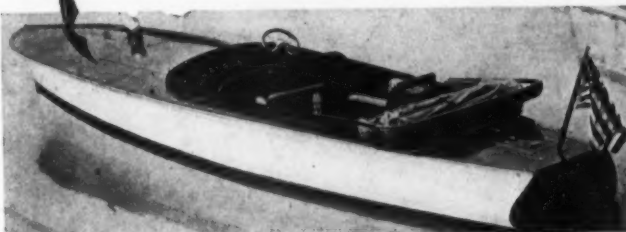
The Monitor Boat and Engine Co., of Newark, N. J., make an exceptionally complete line of knock down frames, including open family launches, runabouts, extremely high speed boats and hydroplanes, and all types of raised deck, trunk cabin and bridge deck cruisers. Having had a great deal of experience in the knock down business, this company is able to turn out frames which can be put together by any amateur if directions are followed. Monitor frames are set up in the factory before being sent out, and all holes are bored, all timbers set in place, and all parts plainly marked, so that it is practically impossible for the purchaser to go astray.



A Robinson Motor & Steel Boat Wks' steel-hulled 21-footer.



A mahogany semi-speed boat made by the Dick Barrett Boat Bldg. Co.



Stock runabout manufactured by the Weckler Boat Co., of Chicago.



A Richardson 25-foot mahogany V-bottom runabout.



The popular 26-foot 18-miler made by the Fay and Bowen Eng. Co.

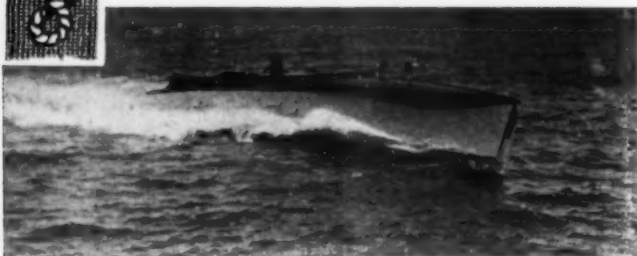


Wanderlust, a Matthews runabout of very seaworthy design.



The 25-foot runabout made by the Ginman Boat Co.

Stock Motor Boats.



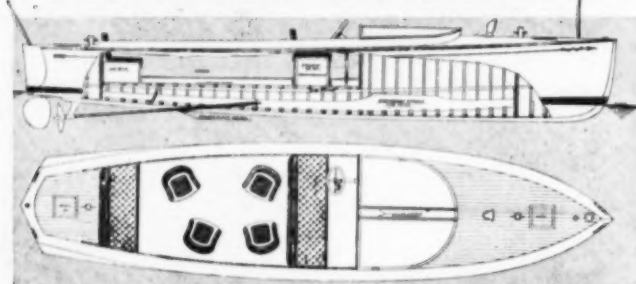
A fast runabout made by the J. H. Ross Boat & Canoe Co.



One of the speed boats turned out by J. E. Dingee, Mt. Dora, Fla.



An Everett-Hunter Boat Company stock family model.



An express made by the Camden Anchor-Rockland Mach. Co.



A Hunter boat, 20' x 5' 6", on Lake Leelanau, Mich.



An able runabout built by the Niagara Boat Co.

The Ross Motor Boats.

The J. H. Ross Boat and Canoe Company, Orillia, Canada, build models ranging in length from a 16-foot open boat to a 30-foot trunk cabin cruiser. Their fast runabouts with engine installed forward are built in all lengths from 18 to 25 feet. Another model, the 30-foot special fast runabout, is a very attractive craft in all respects. Josephine, built from the designs of this stock model, was the winner of five prizes at the Toronto Exhibition races this fall. She is exceptionally easy to control, as is shown by the fact that a sister boat won many prizes with a woman operating her, and withal she is capable of making twenty miles per hour. The seating capacity of this excellent runabout is 12 and she is powered with a Ferro or a Fairbanks-Morse engine.

The Dingee Speed and Pleasure Boats.

James E. Dingee, of Mt. Dora, Fla., builder of speed and pleasure motor boats, has five stock boats of sizes and power to suit the fancy of most any enthusiast. These include a 21 feet 6 inches by 4 feet 11 inches V-bottom runabout with auto control and a 12 h.p. 2-cylinder motor; a 22 feet 6 inches by 4 feet 8 inches V-bottom runabout model with a 21 h.p. 2-cylinder motor; a 25 feet by 6 feet 8 inches V-bottom raised deck cruiser with 21 h.p.; a 22 feet by 44 inches racer which, with an 8 h.p. 2-cylinder motor makes 16 miles per hour, and a 20 feet by 45 inches hydroplane with 21 h.p., which is easily able to maintain 22 miles an hour for a long period. Mr. Dingee also builds any kind of a boat from 10 feet up to a 30-footer from any design.

Darrow's Patented Steel Boats.

The F. H. Darrow Steel Boat Company, of Albion, Mich., are manufacturing an extensive line of steel motor boats, row boats, canoes, etc. Some of the important claims for these boats are that they will not leak, will run easily, are light, strong, durable, steady and roomy. They will not rot, rust, water log, or puncture. They neither shrink nor swell, are economical in operation and very neat in appearance. These boats have but one seam at each side where bottom and sides join. This seam is one-half inch wide and is made by double seaming on the under side of the boat.

The Everett-Hunter Boat Company.

The Everett-Hunter Boat Company, of McHenry, Ill., carry all sizes of runabout models of motor boats in stock and also speed hulls in sizes of 20 feet by 4 feet 6 inches, 25 feet by 4 feet 9 inches, and 30 feet by 5 feet. These are built in large quantities and in a factory modern and up to date in every way. The materials are the very best, as is also true of the workmanship. The stock family models are built with white oak frames with cypress planking, and the speed hulls with oak frames and cedar planking. An instance of the strength of the Hunter boat may be had by analyzing the construction of the ribs, which in their 18-foot stock hull are 3/4 inch by 1 1/4 inches, spaced 6 inches apart, and having 5/8 inch planking fastened to them. Hunter boats have a good liberal freeboard on all sides.

A Knox 30-Foot Express.

The Camden Anchor-Rockland Machine Co., Camden, Me., makers of Knox engines and launches, are just putting on the market a stock 30-foot express, which has interesting features. The construction calls for keel and bilge clamps of one-length yellow pine, the ribs are white oak, spaced 8 inches on centers, the deck beams are of clear spruce, and the planking of white pine or cedar, copper fastened. The decks are of white pine laid parallel to keel, and the plank sheer, coaming, lazy-back at stern and steerman's seat are of mahogany. The seat at the after end of the cockpit has three compartments, one for ice and two for food, insulated and lined with galvanized iron. This provision will be appreciated when the boat is used for picnics. The forward seat, which has a hinged back for ease in reaching the helmsman's position, has a fuel tank under with capacity of about 50 gallons. The cockpit is watertight and self-bailing, and is finished throughout in mahogany. Automobile control of the 22 h.p. three cylinder Knox motor is provided, and the reverse gear to this motor is self-contained in its base. With this engine installed the boat is capable of making a speed of 14 miles, and the price for this boat with the usual equipment is about \$1,780.

Fellows Stock Specials.

The Joe Fellows Yacht and Launch Co., Inc., Wilmington, Cal., carry on hand for immediate delivery, stock specials in the following sizes and at the following prices: 18-foot, \$200; 21-foot, \$475; 25-foot, \$600. These prices are for the completed hulls without power plant, as the company prefers to give the purchaser a choice of the engine he thinks best suited for his needs. These boats are constructed with oak keel, stem, stem knee, transom, transom knee, floor beams, frames and engine bed. The coaming and seat are of white ash, and the planking, decking, and floors clear cedar. Each hull receives its full quota of paint and the deck hardware is complete. It is claimed for these boats that they are remarkable sea boats.

Weckler-Fauber Hydroplane.

In addition to a full line of regular launches, the Weckler Boat Co., of Chicago, Ill., are licensed manufacturers of hydroplanes of the genuine Fauber type. The leading hydroplane of this line is a 26-foot boat, finished with mahogany throughout and having seating capacity for five people. This 26-foot model, which is sold for \$4,200 complete, is regularly equipped with a 100 h.p. Van Blerck four-cycle, six-cylinder motor, which develops for the boat a guaranteed speed of 35 miles per hour.

Partelow Stock Launches.

The Chas. M. Partelow Boat and Canoe Company, Quincy, Mass., manufacture and carry in stock launches from 18 to 35 feet in length, finished in mahogany, cherry, oak, ash, chestnut and with slats or solid seats, grating floors, etc., suiting as far as practicable the personal tastes of purchasers. All models are of the torpedo stern type, and great speed and seaworthiness is claimed by the makers for this type. The prices for the finished boats range from \$175 to \$530 and the company is all ready to furnish knock down frames for boats from 10 to 40 feet in length.

Niagara Boats.

The Niagara Motor Boat Company of North Tonawanda, N. Y., build a very complete line of stock boats which may be divided into three types: High and Semi-speed; Runabouts, and Cruisers. The high-speed runabouts range in size from 20 to 40 feet and are equipped with motors suitable to obtain any speed up to 22 miles per hour. These boats are of the displacement type, handsomely finished in mahogany, fully equipped and carefully arranged for the comfort of the passengers.

The most popular of this type is a 28 foot model with 4 feet 10 inch beam, and powered with a high-grade four-cycle motor of 35 h.p., giving the boat a speed of 20 miles per hour. This model, fully equipped and ready to run, sells for \$1,800.

The semi-speed type is composed of a variety of models from 26 to 40 feet in length. In these models a maximum amount of comfort and seaworthiness has been obtained, which together with such refinements as electric starter, electric lights, foot pedal reverse control, plate glass wind shield, divided helmsman's seat and other features, make these boats unusually attractive and complete. All of these models are of the auto type, having the motor installed well forward under hatches with all engine controls centered in the steering wheel. Instead of the usual reverse gear lever, foot pedals are used. The electric starter provides a most simple and certain means of starting the motor, accomplished by depressing a small lever attached to the bulkhead. This starter also furnishes current for electric lights throughout the boat. A large plate-glass windshield is provided and is arranged to drop out of sight into a pocket just forward of the bulkhead when not in use. The helmsman's seat, instead of running the full width of the boat, is divided by a passageway in the center, leaving on each side, a large and comfortable seat, which are provided with side arms and high upholstered backs. The passage affords a means of getting into these seats without having to climb over the seat from the passenger cockpit. With the exception of a deep seat at the aft end, the cockpit is left entirely clear for the use of five wicker chairs.

Prices for these boats vary from \$1,800 to \$5,000, according to the size and speed desired.

The remainder of the Niagara line of stock boats is composed of cruisers varying in length from 25 to 50 feet. While these are standard stock designs, arrangements and appointments are worked out to suit the individual requirements of the purchaser.

Stock Motor Boats.

Two Hand V-Bottom Boats.

Two of the leaders for 1914 turned out by Wm. H. Hand, Jr., of New Bedford, Mass., will be a V-bottom 28-footer, Piute IV, and a V-bottom 30-foot day cruiser. The former of these two stock boats is supplied with either a 40 h.p. Loew-Victor 4-cylinder motor or a 6-cylinder 60 h.p. motor of the same make, with which the speed is 22 miles. The boat is built with deadwood to protect the propeller, and it is properly designated as a sea-going runabout, as it possesses marked abilities for rough water use. The price varies between \$2,000 and \$2,750 complete, varying in accordance with the details of equipment. The finish of this type which is also built in 18 foot, 21 foot, and 24-foot lengths is of the best in every respect. The day cruiser is a new type of V-bottom runabout, having a cabin with accommodations for two, and galley, toilet, icebox, and other conveniences. It is primarily a boat for rough water conditions, and the speed with a 25-40 h.p. Loew-Victor motor is in excess of 15½ statute miles per hour. The price complete ranges from \$2,500 to \$2,750, according to the equipment. This style is also built in a 35-foot length powered with a 6-cylinder 60 Loew-Victor motor, developing 15 miles per hour.

Pope Knock Down Boats.

The Pope Boat Company, of Fond-Du-Lac, Wis., have many designs of interest to the prospective purchaser, including the Pope Special, the extreme speed boats and the cruisers. All their models are the product of years of careful study and practical boat building. Their speed boats are very fast for the horsepower installed, and the construction of all the Pope boats is the best possible. It is claimed that with the Pope knock down models it is impossible for you to go wrong, if the very careful instructions which are furnished are followed. Their outfit includes the knock down material in various stages of completion, and even includes such equipment as steering wheel, necessary hardware, bulkhead controls, etc. Either iron, copper or brass fastenings can be furnished, and for those desiring especially finished surfaces to their craft, mahogany trim can be supplied at very slight additional cost. The cruiser outfits include everything from a 26-footer up to a complete 40-foot motor boat.

Cleveland Auto Boats.

The Cleveland Auto Boat Manufacturing Company, of Cleveland, Ohio, manufacture a line of cabin and open boats known as the Auto Craft. These boats are of sizes ranging from 18 up to 32 feet in length. The 18-foot Auto Craft Special, which is the baby of the family, is of the family launch type with a beam of 4 feet 6 inches and the engine installed amidships under a thwartship seat. The motor is a 3 h.p. Ferro engine with a special Auto Craft underwater exhaust. The frame of the boat is of white oak and the planking ½-inch southern cypress put on with the hollow and round system of planking. The trim is of varnished oak and the fittings are polished brass. With a seating capacity for eight people she has a speed of 8 miles per hour. The price of this little boat complete and ready for the water is \$200.

A Seabright Dory.

Willard H. Jerolamon, of Galilee, N. J., is concentrating his energies on a 20 ft. x 5 ft. 8 in. Seabright dory which is copper fastened throughout. The frame is of white oak and the planking ¾ in. cedar in long lengths. The boat is finished with three coats of paint and is sold complete for \$310, equipped with a 5 h.p. Hartford motor. Mr. Jerolamon also builds a 35 ft. x 5 ft. 6 in. launch, which, equipped with a 15 h.p. Buffalo motor, is capable of a speed of 13 miles per hour. The hull is planked with ¾ in. cedar copper fastened to white oak timbers 1½ in. square. The deck and brightwork are mahogany, and complete, this boat sells for \$1,300.

Gile Open Launches.

The Gile Boat & Engine Co., Ludington, Mich., have a very complete line of open boats. The company offer two styles of open launches which are known as the "Ideal" and the "Leader" models. The "Ideal" is 22½ feet in length with a beam of 5 feet. Equipped with a Gile 8 h.p. engine installed under a hood and fitted with full automobile control, the boat sells for \$500. It has a speed of 12 miles per hour. The "Leader" is built in two smaller sizes, namely, 16 foot and 18 foot lengths. The 16-footer is equipped with 2½, 4 or 5 h.p., and the regular installation in the 16-footer is a 2½ h.p. Gile motor. This boat is sold complete at the very low price of \$114.

Dunphy Knock Down Frames.

The Dunphy Boat Mfg. Co., of Eau Claire, Wis., manufacture a representative line of canoes, rowboats and motor boats, and will make any boat to special order, although they make a specialty of a line of open motor boats which are kept in stock. These boats are of the family and runabout types and range in size from 15½ to 24 feet. Another feature of this concern's output is a line of knock down frames which are not sold until they have been set up in the Dunphy factory and all timbers bent and beveled, making it a simple matter for the amateur to put them together if he follows directions.

Dories and Power Skiffs.

A. R. True, of Amesbury, Mass., is in the market with tenders and rowing skiffs, and what will be of greater interest to motor boatmen, a smooth plank dory equipped with a 4 h.p. motor, and a smooth plank power skiff fitted with a 3 h.p. motor. The power skiff is 16 feet in length with a beam of 5 feet. While it is a comparatively new model it has been given exhaustive tests, both by the builder and customers, and has proved itself successful in every way. The boat is constructed with white oak frames and planked with pine in one length. The engine bed of 2-inch oak is thoroughly braced and secured in order to eliminate vibration. The boat is equipped with a mahogany steering wheel, galvanized rudder and shoe. The gasoline tank is fashioned of heavy copper and is equipped with swash plates, and a screen which excludes all dirt from the carbureter. The gasoline line is of heavy seamless copper with two shutoffs. Complete with a 3 h.p. Atlantic motor, the price of this little boat is \$165.

A 17-Foot Hydroplane.

The Patterson Boat Works, of Point Pleasant, Ky., are making a 17-foot hydroplane with a beam of 3 feet 9 inches, which has a guaranteed speed of 27 miles per hour. The frame is of white oak, and the planking is of ¾ inch selected mahogany with brass and copper fastening. The decking is of 5-16 mahogany edge fastened and the coaming, moulding, seats and all interior joiner work are also of mahogany. Two coats of filler, one of mahogany stain and five of Valspar varnish are given to the hull, and each coat of varnish is rubbed with pumice and the last polished to a piano finish. The deck hardware which includes a funnel and flag sockets is of polished brass throughout and the 10-gallon gasoline tank mounted on the after deck is of copper. The automobile steering wheel carries throttle and spark levers, giving perfect one-man control of the boat. The seats are upholstered in leather and the cockpit floor is covered with linoleum. The price complete is \$750, and the equipment consists of a fire extinguisher, life preservers, brass whistle and combination oil and electric lights.

The Michigan Steel Boats.

The Michigan Steel Boat Company, of Detroit, Mich., continue their line of non-leakable and non-rustable pneumatically welded steel boats. The leader in this line is the 18-foot Peter Pan model which, with a 6 h.p. engine and seating ten, will make 5 miles an hour, operating on either gasoline or kerosene. One of these boats recently completed a trip from Havana, Ill., to Olga, Fla., going all but 400 miles of the 2,200 miles separating the two points under her own power. A trip like this speaks well for the dependability of this steel boat, and the other two models in the Michigan line—a 16-foot auto speed boat express and an 18-foot automobile boat—are built according to the same high standard.

The Speedway Stock Boats.

The Gas Engine & Power Company and Chas. L. Seabury & Company, Cons., of Morris Heights, N. Y., line of stock boats is limited to four types as follows: A 30-foot Speedway runabout with 6-foot beam and speed of 15 miles per hour, and a 32-foot runabout of the same construction and finish, with a beam 6 inches less and a speed of 20 miles per hour. The engine used in this model is a 6-cylinder 42 h.p. Speedway instead of the 4-cylinder 28 h.p. model installed in the 30-footer and the price of the boat is \$3,000.

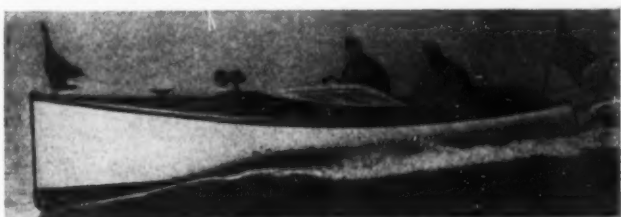
In addition to the foregoing this concern makes two styles of clinker built yacht tenders 21 feet and 25 feet in length. Each is equipped with a 4-cylinder, 4 inch x 4½ inch Speedway engine of 18 h.p. They make a speed of 16 and 17 miles respectively and cost \$2,500 and \$2,800.



Piute IV, a 28-foot Hand V-bottom stock speed boat.



The 26-foot Special made by the Pope Boat Co., Fond-du-Lac, Wis.



The Cleveland Auto Boat Company's speed model.



A Seabright dory made by W. H. Jerolamon, Galilee, N. J.



One of the Michigan Steel Boat Co.'s line of steel boats.



One of the fast Speedway runabouts.

Stock Motor Boats.



Rice Bros. & Co.'s auto runabout having automobile control.



The able little dink of the Davis Boat Works Co., Sandusky, O.



The 28-foot Elco Express designed and built by Elco-Bayonne.



The Racine-Truscott-Shell Lake Boat Co.'s 18-foot speedabout.



A Speedway yacht tender with ample carrying capacity.



A Bath Marine Construction Co.'s express runabout.

Rice Auto Launches.

Rice Bros. Co., of East Boothbay, Me., are in the market with several types of stock auto launches. One of these is a 17-foot Special which has a beam of 4 feet 6 inches, and being decked over forward and aft with the motor in the after end of the cockpit with seats along the side makes an excellent family model. The power equipment consists of a 3 h.p. Rice Model B motor with a bore and stroke of 4 in. x 4 in., with make-and-break ignition. The price of this boat complete is \$195. A boat slightly larger is the 20-footer equipped with 8-10 h.p. Rice double cylinder jump spark motor equipped with reverse gear. The motor is also installed in the cockpit, and the boat may be handled from the forward bulkhead or from the bulkhead aft of the motor compartment. It sells for \$375. The speediest boat of the Rice line is the 20-foot auto launch in which the motor is installed under the forward deck, and operated entirely from the forward bulkhead with automobile steering wheel and controls on it. In this boat there is a thwartship seat for the helmsman and another cross seat at the after end of the cockpit, leaving room for several easy chairs. The price of this model equipped with an 8-10 h.p. Rice motor, giving a speed of 13 miles an hour, is \$475.

Davis Dinks.

The Davis Boat Works Co., Sandusky, O., are still in the market with their popular Davis Dinks. These are made in a variety of styles and lengths, two types of which are provided with motor plants. These are the Special Power Tenders in 14 and 16-foot lengths and the Stock Power Tenders in 12 and 14-foot lengths. These two styles are practically the same in construction, except that in the Stock class the forward and after decks are not included. The boats are built in two grades—mahogany and oak trim—and the prices range for the Special from \$200 to \$240 for the hull with all fittings, except the motor, and for the Stock \$115 to \$150, without the motor, any make of which a suitable size can be installed at the purchaser's direction. These boats are good sea boats and are fine for use as yacht tenders or for fishing purposes.

Elco Stock Boats.

The Elco-Bayonne Company, of Bayonne, N. J., manufacture a very complete line of high-grade boats, of which the 35-foot express cruiser is perhaps the most popular. This high-speed boat is finished entirely in mahogany, this wood being considered the best for the purpose, both as to appearance and strength. It is built with high freeboard and deep hull, affording the maximum comfort and safety and it is claimed will do all on water that the best automobile will do on land. Powered with a six-cylinder 60 h.p. Elco motor, it has a guaranteed speed of 24 miles an hour. The motor is fitted with rear starting device and planetary transmission, the gear changing being done by foot levers, so that the boat is an exceptionally easy one to handle. An electric starter and lighter may be fitted to this motor at an extra cost. Without it the boat sells, with complete equipment, for \$4,000. Similar to this boat is the 28-foot Elco Express, with a guaranteed speed of 20 miles developed from a four-cylinder, 40 h.p. Elco motor. This boat is planked with cedar, but the brightwork is all mahogany. In the cruiser type this concern offers a 36-foot boat with unusual cabin accommodations and deck space for a boat of its length. Their 45-foot cruiser has proved very popular during the last season in the hands of their customers. In seaworthiness and cabin accommodations this boat can hardly be equalled for its length, it is claimed, and its power equipment, consisting of a four-cylinder, 37 h.p. motor, has proven very satisfactory. While not exactly a stock boat, this concern has produced so many models from a certain 75-foot design that it is able to quote much more reasonable prices on this cruiser than would be the case if the boat were designed anew from start to finish. The company is also still building Elcoplanes of various lengths. While not hydroplanes of the highest speed for a given length, these boats develop unusual speed for the horsepower installed and have proved very satisfactory.

Racine-Truscott-Shell Lake Boats.

The Racine-Truscott-Shell Lake Boat Company, of Muskegon, Mich., have even a more complete line than they have ever before shown, and includes everything from a 12-foot yacht tender up to large shallow draft yachts and Government boats. Their specialties include a 12-foot yacht tender, the Racine dory launch, a 16-foot knockabout, an 18-foot speedabout, a family launch in three sizes with various motor powers, a 20-footer with a speed of 11 miles per hour, fast family runabouts, a 28-foot cruiser, a 36-foot cruiser, fully equipped, a 40-foot express day cruiser, and a 40-foot bridge deck cruiser. The old glass cabin boats are by no means omitted, and their line of shallow draft boats includes everything from a 16-footer with a 3 h.p. motor up to a 35-footer with a 15 h.p., 2-cylinder motor. Their larger boats of stock design can be varied to suit the particular requirements of the purchaser.

Two Open Launches.

The Western Launch & Engine Works, of Michigan City, Ind., are the builders of two types of noteworthy open launches. The smaller of these boats is 20 feet in length with a beam of 4 feet 6 inches, and is planked and trimmed in mahogany. Equipped with a 2-cycle single-cylinder motor of 4 h.p. and copper fuel tank the boat sells for \$267. This same hull may be equipped with a 2-cylinder motor of double the horsepower, and the price then, with reverse gear and full automobile control is \$323. With this motor the boat has a guaranteed speed of 12 miles per hour. The specifications for the larger boat which has a length of 25 feet and a beam of 5 feet 2 inches, are the same as far as the hull and fittings are concerned, but the power plant consists of a 4-cycle, 4-cylinder engine, with full automobile control installed under a hood. The price quoted for this model is \$490.

Power Canoes.

E. M. White & Co., of Old Town, Maine, manufacture a complete line of canoes. This line includes canoes for sail, paddle, or motor, but the specialty which will interest motor boatmen is a motor canoe with coaming around the cockpit and decked forward and aft. Equipped with air chambers so that it is non-capizable and non-sinkable, this craft is exceptionally seaworthy, and for use in rivers and small lakes where there are no extraordinarily high seas it is highly satisfactory. Made in several lengths they are equipped with various power plants and are sold at a low price.

Valley Boats.

The Valley Boat & Engine Co., Saginaw, Mich., furnish knock down hulls in three stages of completion. The first is the sawed out material for the frame, undressed. The second is the partly completed frame ready to be finished by the purchaser, and the third is the completed frame shipped either erected ready for the planking or knocked down, but with all holes bored. In whatever form these frames are bought, the price always includes full size paper patterns for the parts not furnished, together with full directions. One completed boat which this firm has on the market is 16-foot hydroplane equipped with a Roberts 50 h.p. motor. This outfit is remarkable because of its lightness, since the power plant weighs only 195 lbs., or with reverse gear and elevated rear starter exactly 375 lbs. One of these 16-footers on trial made 31 m.p.h., with the motor driving a 17 in. x 30 in. two-bladed propeller 1300 r.p.m.

The Bath Marine Construction Co.'s V-Bottom Boats.

The Bath Marine Construction Company, of Bath, Me., manufacture a line of stock V-bottom boats, including hydroplanes, cruisers, runabouts and the ordinary type of open launch. They also have yacht tenders. These boats may be had all complete and equipped with reliable engines, or can be purchased without the engines, but all completed as far as hull work. If the buyer wishes to build the boat himself he can buy paper patterns the full size of every part and cut his own lumber from the pattern, or he can purchase the boat in knockdown form and only do the erecting himself. These boats also come with the keel and frames in knockdown form, so that the planking and finishing can be done by the amateur. They make a specialty of a 25-ft. hydroplane equipped with a 6 h.p. engine, which sells for \$2,000. These boats have been used very successfully in races in various parts of the country. This boat, of course, can be purchased in knockdown form. Another one of their leaders is the 13-ft. hydroplane known as the Bumble Bee, which has a speed of 15 miles per hour with a 6 h.p. double-cylinder motor. The price of this boat complete is \$325. Without the engine the hull sells for \$183, and the boat can be had in knockdown form for \$64. The knockdown frame only costs \$27.

Stock Motor Boats.

Pioneer High Grade Motor Boats.

The Pioneer Boat and Pattern Co., of Bay City, Mich., which have for their slogan "Build it yourself," have the same line which they have had on the market for several years and is well known to all of our readers, in addition to several new models which have been recently perfected. One of the latter is a 40-foot tunnel stern boat, designed by Mr. A. L. Arnold, and built by the Pioneer Boat and Pattern Co. for the United States Government to be used as an Inspector's Boat by the Engineering Corps on the Ohio River, with headquarters at Wheeling, W. Va. This boat has a draft of only 16 inches, and under the speed trials which were made under the supervision of the Government officials, showed an average speed of over 12 miles per hour. This boat was equipped with a 4-cylinder Niagara motor, having a bore of 6½ inches, and a stroke of 6½ inches. The Pioneer Company can furnish any of their boats either in a knock down form or completely finished.

The Red Wing Twenty.

The Red Wing Motor Company, of Red Wing, Minn., are still making a specialty of their Red Wing Twenty, which has been so successful in the past two years. This year this popular runabout is fitted with the new 1914 Red Wing Thorobred motor, a four-cylinder affair of compact design and ample power. It is capable of driving the boat at a rate of 20 miles per hour. This 20-footer has a beam of 4 feet 6 inches, has full one-man control, and is handsomely finished in white cedar and mahogany. Another boat in the Red Wing line is just under the 26-foot length to allow it to enter in Class 1, and has a beam of 5 feet. It also is finished in white cedar and mahogany, and like the 20-footer, is powered with a Red Wing four-cylinder, four-cycle Thorobred, which gives it a speed of 17 miles per hour. A feature of the Red Wing boats is the rear-starting device, which permits the operator to start the engine and have full control of the boat while in a sitting position.

A 24-Foot Steel Boat.

The Savanna Boat Works, of Savanna, Ill., make a specialty of shallow draft house boats with or without power. They also make a stock model open boat for 1914 which is illustrated in this department. It is constructed with white pine planking, with white oak ribs at stern and bow stem. The engine is carried forward under a hatch, and the cockpit is left open. The boat is 24 feet long with a beam of 4 feet 10 inches, and equipped with a 12 h.p. 4-cycle, 4-cylinder engine developing a speed of 14 miles an hour, sells for \$375.

A Morristown Stock Model.

The Morristown Boat and Engine Works, Morristown, N. Y., are now prepared to deliver a stock 28-footer of the following specifications: The boat has a 5-foot beam with a draft of 2 feet when running. It is constructed of white oak for the keel, stem and frames, with ½ inch white pine or cedar for the planking. The engine-bed runs over two-thirds the length of the boat, thus distributing the strain and vibration from the engine. The engine compartment is located forward protected by a removable hatch. A two-cycle, 3-cylinder, 15 h.p. Morristown engine, or a four-cycle, 4-cylinder, 25 h.p. motor of the same make is installed, equipped with automobile steering wheel carrying controls, and with reverse lever placed convenient to the operator's usual sitting position. The other equipment includes cushions, fenders, life preservers, automobile top, running lights, and in fact everything necessary for running, with the exception of gasoline.

The Peter Pans.

The Reliance Motor Boat Company, of New York, manufacture five different types of stock boats. They are, with one exception, of the runabout type. Their smallest boat, which is a 21 footer, is known as the Reliance Special and is equipped with a 4-cylinder 24 h.p. Continental motor with high tension ignition. These boats are finished in mahogany, with polished brass deck fittings. The boat is equipped with a rear starter and has electric sailing lights. They make a 28 foot model, which is a duplicate of the well known Peter Pan IV. This boat is equipped with a 40-50 h.p. Continental motor and has a speed of 27 miles. Their largest boat, which is a 40 ft. x 7 ft. 9 in. day cruiser, is a duplicate of Peter Pan Sr., and has a guaranteed speed of 20 miles per hour with two 50 h.p. Continentals driving twin screws.

H. B. Pickering Co.'s Runabouts.

The H. B. Pickering Co., Ann Arbor, Mich., have a line of runabouts ranging in length from 24 to 43 feet, and also have what they call a Water Cab, being a 28-foot runabout with a light glass cabin aft. The boat appears to be both comfortable and speedy. The driver's cockpit forward of the cabin has all controls brought to it, and is protected from the weather by a windshield and storm curtains. This boat is regularly equipped with a 30-45 h.p. Sterling motor, but the purchaser is given an option of a 40 h.p. Loew-Victor engine.

The largest runabout this concern produces is known as the Elite-40, which is powered with an 8-cylinder Sterling racing engine and has a speed of from 28 to 30 miles per hour. Seating accommodations in this craft provide for fifteen people. The next size smaller is called the Elite-32, and has a length of 31 feet 10 inches over all and a beam of 5 feet 2 inches. This boat is powered with a 45-65 h.p. Sterling motor and is able to maintain a speed of 25 miles per hour. Its seating capacity is almost as great as in the larger size. The smallest runabout which this concern puts out is the Elite-24, a 24 foot 6 inch by 4 foot 6 inch runabout, which has a speed of 20 miles per hour. As in the Water Cab an option of either Sterling or Loew-Victor motors is given. In this little runabout there is a seating capacity for six or eight people. The materials which go into these boats and the workmanship is all of the highest grade. The framing is of white oak under white cedar planking with copper and brass fastenings. The decks are of mahogany and the interiors are also of this wood. The controls are of the automobile type and the reverse is operated by foot pedals. The gasoline tanks drain outboard and as a further safety precaution air tanks are fitted so as to float the boat in case of accident. The motors are fitted with self-starters and the electric plants are also used to light the boat.

The Dandy Dink.

The Dandy Dink is the name given to the motor and rowing tender built by the Water Craft Company, of No. 221 Fulton street, New York City, who report good sales on this beautiful little boat during the past season, and every purchaser reports nothing but the highest praise for his boat. They are all very enthusiastic over the excellent performances of their boats under unusually rough weather conditions. The Dandy Dink is made in 10, 11, 12 and 14 foot lengths, which are sold at very moderate prices. The design of this boat is such that it is adapted to be turned into a rowing tender if so desired, and as the shaft hole is plugged, in this case the owner may, if he so wishes, install a suitable motor by building a foundation and driving out the plugs in the shaft hole. These boats have a beam of 4 feet, and a depth at the bow of 27 inches, at amidships 22 inches, at the stern 25 inches. They are very strongly built and the equipment is very complete and consists of polished brass rudder yoke, oar locks, flagpole sockets, cotton fender, gasoline tank, water connection, oars, etc. Any power plant desired may be installed, but one of about 2½ h.p. is standard, and when fitted with a Roper safety propeller outfit makes a very complete outfit.

Brooks Up-To-Date Boats.

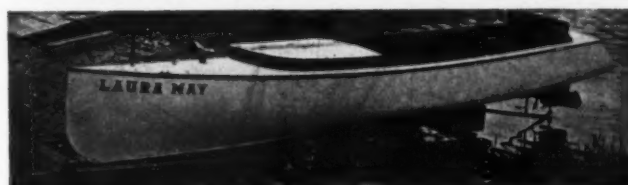
Men and boys all over the world are building fine boats every year, aided by the Brooks Manufacturing Company, of Saginaw, Mich., who offer the parts in knock down, which greatly simplifies the work and saves the buyer considerable in first cost price. Besides knock down frames with full size patterns and complete instructions, where the buyer furnishes his own planking, decking, etc., and assembles them, the Brooks Company can supply boat parts, leaving only the assembling to the buyer, or if he prefers he can purchase only the full size patterns with complete instructions. By this last method, the builder makes his own craft, preparing all his own material. The Brooks' list of customers includes men who build a boat every year, using it for a season and then selling it at a good profit. The unusually large number of models offered gives the builder a great range to choose from, and the Brooks Company will gladly furnish their catalogue to any one interested.



A speedy hydro from the Pioneer Boat and Pattern Co.



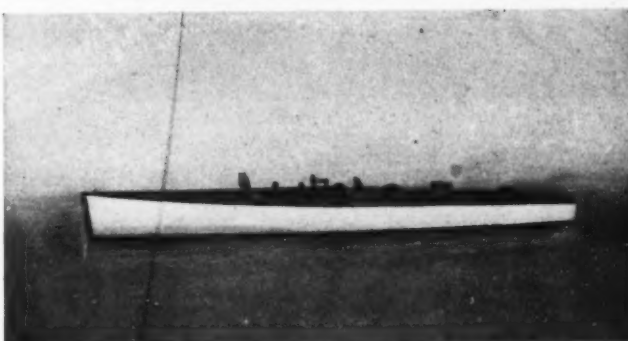
The Red Wing Twenty, fitted with a 4-cylinder Thorobred motor.



A stock open boat made by the Savanna Boat Works.



Tiny Tad II, a speedy little Reliance hydroplane.



A Morristown stock model which has very complete equipment.



The popular Dandy Dink, turned out by the Water Craft Co.



Model 234, a Brooks Mfg. Co. knock down boat.

Stock Motor Boats.



The 14-foot, 30-mile Toppan Hydro-Bullet.



The stock hydro turned out by the A. E. Eldredge Corp.



One of the models of the Mullins Steel Boat Co.



One of the Elco-Bayonne Co.'s hydroplanes at full speed.



The Milwaukee stock 20-foot hydro runabout.



The famous Seabright dory manufactured by the Henry Keller Co.



A quiet running Niagara boat.

The Toppan Boats.

The Toppan Boat Mfg. Company, with offices at 31 Haverhill street, Boston, Mass., and with factories at Medford, Mass., on the Mystic River where the best of building and shipping facilities are afforded them, are situated so that they can build almost any kind of a pleasure craft from their 15-foot motor boat, Sportsman at \$120, to their 35-foot raised deck launches, which average in the neighborhood of \$1,200 to \$1,500. One of the most popular boats which they make is the 19-foot smooth planked standard dory, equipped with 3-4 h.p. Toppan jump spark reversible engine, which will carry seven to ten people comfortably, and which will speed along at about 7½ miles per hour. The Toppan Company advise in cases where the boats are to be used in extremely rough seas to have the engines enclosed under the after deck, which is a very convenient arrangement and which protects the engine from rain and spray, and from intruders.

This is the size and type of boat furnished Capt. Chas. Brooks Clark, of West Point Academy, which was used by Capt. Clark with great success under very rough conditions of sea, and also in a notable rescue incident on Lake George, N. Y., where the seaworthiness of the Toppan dory was well demonstrated. The Toppan Company also furnished recently several of these boats made with same arrangement of interior to the United States Geodetic Department for survey work in Alaska, and they are doing very commendable work on the coast of Alaska, which also is another evidence that Toppan boats are made for service as well as pleasure.

Then again the latest Polar expedition under the direction of Donald McMillan, which left New York last July in search of the Crocker Land, was equipped with two of the Toppan dories, one 30 feet long, and one 27 feet long, both equipped with the famous old reliable Toppan jump spark engines. These boats were made of the regular Toppan construction, but were even a little heavier built all through to insure their withstanding the icy regions that they will encounter.

The Toppan Company have added during the last few years a knock down department, so that people in foreign countries and in inaccessible places can obtain the Toppan dories in the knock down form and have them built without any trouble and at the same cost that they could obtain them if they were within a short distance of the company. The freight rates on knock down frames are very reasonable and the Toppan frames are sent in the finished form with the work of beveling and fitting all done so that it is impossible for the amateur to go wrong if he follows the Toppan instructions carefully. These dories are furnished in the knock down form in the following sizes: 18, 20, 22, 26 and 30 feet and special bulletins relating to them can be had from the company. They also have a special 30 x 8 ft. offshore cruiser which is a fine rough water boat.

W. H. Mullins Company Steel Boats.

The W. H. Mullins Company, of Salem, Ohio, are still specializing in pressed steel motor boats, which have long made them famous. The characteristic features of these boats include designs by Whittelsey & Whittelsey, insuring the best design possible, construction of steel by their patented methods, which is very similar to that used for Government torpedo boats, and guarantees against puncture and leaking for all time. Air tight compartments are fitted to every boat, and the power plants installed have only been adopted after the most exhaustive tests. Every Mullins motor boat is equipped with a Mullins under water exhaust, insuring noiselessness, cleanliness and increased speed.

The specifications of the Mullins Leader launches are as follows: The keel and ribs are of heavy oak and the bow and stern posts are also of this material. Under the engine there are placed steel channel ribs to which the engine base is secured and braced. The hull is of heavy-gauge steel plates, pressed rigidly to correct form by large dies in powerful drop presses. The gunwales, seats and all woodwork are the best selected materials, and the interior is finished in yellow pine and oak, natural finish, the flooring covered with the best linoleum. In the 18-foot model the engine, under cover, is installed astern, while in the 24 and 26-foot models the engine occupies a position amidships, concealed by a handsomely designed wooden hood which can be removed, giving ready access to any part of the engine. The reverse gear is also concealed under the hood, no machinery or moving parts being visible. The fittings include flagpole sockets, steering wheel with hard wood handles, gasoline tank, air chambers bow and stern, and shoe of steel protecting shaft and propeller. The engines installed are of the single cylinder type of 6, 8, or 11 h.p. with jump spark ignition fitted with automatic float feed carburetor, priming and relief cocks, etc.

The Special launches are of similar construction, but the engines are uncovered. The Auto boats, as their name implies, are a more highly finished outfit, so far as power plant and incidental fittings are concerned, although the hulls are of the same reliable pressed steel construction. These boats are constructed with decks fore and aft, and the engine compartment is under the forward deck with all controls brought to the automobile steering wheel. Ferro or Sterling engines will be installed.

Milwaukee Runabouts.

The Milwaukee Yacht and Boat Company, of Milwaukee, Wis., has made no changes in the sizes or models of its standard runabouts for the coming season. The company has built a great many runabouts, and while no radical changes have been made, refinements have been added from time to time.

The well known white decks, the raking dash, the divided type of front seat, and other features originated by the Milwaukee Company remain unchanged. These boats are now equipped with electric self-starting and lighting outfits. This is the same type of equipment as used by the builders of the finest motor cars. A new disappearing type of windshield has also been added. This Milwaukee windshield is a new and original device, and the builders have not only received a number of compliments on its appearance, but also on the way all details have been worked out. It is arranged so that when not in use it is entirely concealed.

All detail work on these boats is of the finest throughout. The stem is shod with a special manganese bronze casting, finished to a sharp edge, and polished. The struts, rudders, and all other detail work is of manganese bronze and of special design. This company realizes the importance of having a substantial and reliable steering gear on a fast runabout, and this feature has been worked out most carefully. These boats are fitted with genuine mohair automobile tops and side curtains. The cushions are of the box spring type and upholstered in genuine leather. They are deep and comfortable and the same as those used in the best automobiles.

The 33-foot Milwaukee Runabout is a most attractive boat. It has a liberal beam of 5 feet 6 inches, which makes it very stiff, seaworthy and comfortable. The boat is heavily constructed and is fitted with two watertight bulkheads, dividing the hull into three watertight compartments. The boat is regularly equipped with a 6 cylinder, 75 h.p. motor, with which a speed of 26 miles per hour is guaranteed. Less power can be installed if as high speed as this is not desired. The boat has a seating capacity of from nine to twelve people.

The 26-foot Milwaukee Runabout embodies the same details of construction, equipment, etc., as the 33-footer. This boat has a carrying capacity of seven people. Power is supplied by a 4-cylinder, 30 h.p., 4½ in. x 5½ in. motor, with which a speed of 18 miles per hour is guaranteed.

The 25-foot Runabout has been gotten out for those who want a less elaborate outfit than the standard 26-footer, but who want a boat of Milwaukee quality. The hull construction, detail work, etc., is practically the same as in the larger boats, but the seating arrangement, etc., is less elaborate. A smaller motor is installed and the standard power plant gives a speed of 14 miles per hour. This boat has the same distinguishing features as the other Milwaukee runabouts; and notwithstanding the fact that it is considerably lower in price than the 26-footer, is one of the finest boats of its size now on the market. The company will be very glad to mail catalogue and full descriptive literature to those interested in fine pleasure boats of any type.

The Famous Seabright Dory.

The Henry Keller Company, of Long Branch, N. J., are still on the market with their famous Seabright dory, which is one of the most popular boats ever turned out. Every care has been taken in the design and construction and in the selection of the power plant, to produce a craft which is as reliable in every way and under all conditions as it is possible to make a boat, and at the same time to have the price within reach of everyone. One of these dories has recently been adopted by the U. S. Lighthouse Department, and is now in use on the Delaware Bay in the Fourth Lighthouse District. The Seabright dory is built upon lines which insure absolute stability in any sea, and it will ride the most violent surf easily and safely, its flat bottom acting as a skid to send it far up on the beach in landing. This boat is 20 feet long by 5 feet 6 inches wide, copper fastened and brass screwed, bottom 1½ inch spruce, white oak frame, ¾ inch by 1½ inch, planking ¾ inch cedar, and when equipped with a 4 h.p. motor sells for \$325.

Stock Motor Boats.

Robertson Bros. Complete Line.

Robertson Bros., of Hamilton, Ont., are designing and building everything from the small 12-foot motor tender up to a large motor yacht, including several types of stock boats, auxiliaries and cruisers. They have given the subject of knock down frames special attention and have introduced many features which greatly simplify the work for amateurs. The drawings furnished show in detail the construction of the frame and the form on which it is to be erected, each part being lettered and numbered and corresponding numbers stamped on the frames. These drawings are not printed cuts, but the blue prints of the drawings from which the boats were originally built.

Ripley Steel Boats.

The Ripley Steel Boat Company, of Grafton, Ill., are building a line of steel boats which include racing speed boats, fishing, pleasure and life boats, motor tenders, cruisers, knock down steel hulls, steel barges and everything between these limits and even up to a large gasoline ferry boat. One of the most celebrated of the Ripley boats is Nellie S, which is a regular No. 14 all steel hull with full glass cabin, and has a length of 35 feet and beam of 8 feet. The hull is constructed of 12 steel plates, riveted and corked, and riveting being to heavy channel steel ribs, spaced about 12 inches apart. The cabin is made of select pine and oak, finished in natural colors.

Detroit Boats.

The Detroit Boat Company, of Detroit, Mich., offer among a wide range of models, a compromise stern launch 25 feet in length, which because of its seaworthy qualities and comfort makes an ideal family boat. The 18-foot Bluebird is one of this company's leaders for the coming season, and one which has always been very popular with the boating public. The beam of this boat is 46 inches and her power installation consists of a 3 h.p. Detroit five-year guaranteed motor. The keel and ribs of this boat are of oak, and the planking and cockpit ceiling are of the best Louisiana cypress. The steering wheel is located on the bulkhead and the interior of the boat is very comfortably fitted up. This boat is offered complete for \$200. An important feature of the Detroit engine with which the boat is equipped is that it will run on either gasoline or kerosene without change of equipment.

Two Able Sea Boats.

The Cape Cod Power Dory Company, of Wareham, Mass., still specialize in turning out boats which are noteworthy for their good sea qualities. It has been said of this company's boats that "They ride the sea like a duck, but never dive." Their 20-foot Special is a dory with the sea-going qualities of this type retained, but more of a family launch for the comfort provided. The motor is installed in the cabin at the after end, keeping the cockpit clear for other purposes. These boats are smooth-planked with cedar; frame and keel, etc., are oak and they are sheathed up from floor to rail in the cockpit. They are capable of averaging about 8 miles per hour. The 28 ft. x 7 ft. 6 in. x 2 ft. 4 in. cabin cruiser, also turned out by this company, is remarkable for the amount of room obtained in her interior arrangement. Forward is a 20-gallon fresh water tank, followed by a toilet, and after this the sleeping compartment with two full length berths. Next comes the engine space, where there is also found room for the galley, and the cockpit is also of good size. Fitted with a Palmer 10 h.p. two-cylinder motor, this boat can average 9 miles per hour.

Howard Cruisers.

The Howard Cruiser Works, of Westfield, N. Y., are bringing out several excellent stock cruisers at a very reasonable cost, considering the class of workmanship and equipment, fittings, etc., which are furnished with the boats. Their 27-footer with motor and fully equipped for \$850 is an example of this. All their boats are very strongly constructed and beautifully finished inside and out and equipped with skylight, icebox, sink, planks, racks, shelves, electric lights, reversible propeller, toilet, lavatory, flagpoles, self-bailing cockpit, one-man controls, gasoline tanks with drip pan under, water coil in icebox, galvanized iron lining in the lockers under the berths, and so forth, and so on.

One boat, which will be a stock model hereafter, but on which the output is limited is illustrated on this page. It is 30 feet and 10 inches in length overall, with a beam of 9 feet and a draft of 2 feet 6 inches. A speed of 9 miles per hour is obtained from the Fulton self-sparking motor. As laid out the plan calls for a water tank and locker in the bow with full width galley immediately following. On the port side is the galley sink with dish drying space aft, and a galvanized iron, sawdust cased icebox containing water coil under. On the starboard side is arranged the stove with storage space against the after bulkhead. The main cabin is next aft, fitted with two berths with lockers under lined with galvanized iron. A skylight in this compartment admits ample light. The toilet room is on the port side, entered through a sliding door, and is fitted with porcelain enameled lavatory and marine closet with oak sea and cover. The companionway entrance is on the opposite side and the engine occupies the space amidships, the gasoline tank being installed under the cockpit flooring. The cockpit is of the self-bailing type, fitted with seat and locker space at the after end. The fittings include linoleum for the cabin floor, natural oak rails on the cabin roof, flagpoles and sockets, chocks, cleats, etc., of brass. The boat is lighted by electricity. The reversible propeller with which the boat is fitted is of bronze.

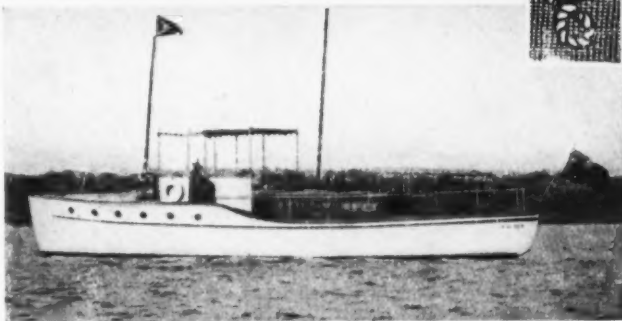
Referring to the structural features of the craft, the frame is of white oak, with 1-inch red cypress planking, copper and bronze fastened. The deck is of cherry and oak strips alternated, and the cockpit floor of white pine. The interior finish is of red cypress, natural or white enamel, while the trim is of natural oak or cherry. Yacht white, or white and natural above the rail is the outside finish. The price of this complete little cruiser is \$1,080 f. o. b., Westfield, N. Y., or complete with canopy and side curtains, \$1,125.

The Peterborough Stock Boats.

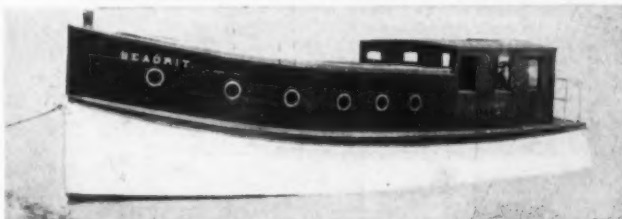
The Peterborough Canoe Company, Ltd., of Peterborough, Ontario, Can., have found that the perfection of the gasoline engine has revolutionized water travel on inland lakes and rivers, and have kept abreast of the times in developing this means of transportation. This company build all sizes and styles of gasoline boats, and the boats which they turn out are well built and seaworthy. They can supply boats complete with any motor, or will sell the hulls ready to install the machinery. Those who do not feel that they can afford to purchase a complete boat, the Peterborough Canoe Company will interest, as their line of knock down frames is most complete. They have gone further than some others in this line of business, as they practically fit all pieces together, such as keel, stem, stem knees, transom, etc., bolting them each in its proper place, and notching the keelson for the ribs and bending the ribs on. All pieces will go together like clockwork, and it is claimed by this company that such a boat can be put together and ready to plank in three hours' time.

Two Moderately Priced Runabouts.

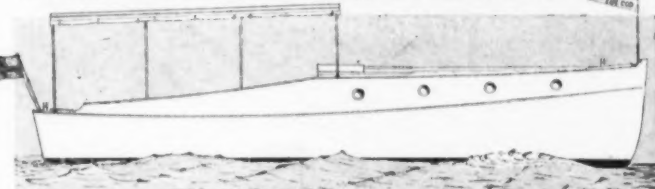
The Brein Marine Works, of Rock Island, Ill., specialize in two models of the runabout type known as the Firefly and the Nautilus. The Firefly model is 18 feet in length with a beam of 4 feet 4 inches, and the Nautilus is 20 feet in length with 4 feet 7 inches beam. Both may be bought with a 4 h.p. one-cylinder engine or an 8 h.p. double-cylinder machine, the speeds obtained from these engines being respectively 10 and 13 miles for the 18-footer and 9 and 12 for the 20-footer. There is a choice in the thickness of the planking given, and this may be 1/2 inch side and 3/4 inch bottom planking, or 3/4 inch for the sides and 1 inch for the bottom. The construction work throughout is of the highest type and it is claimed by the makers that these boats are sold complete cheaper than the individual can build any similar boat himself. The prices as supplied by the makers are: Firefly, \$158, complete with 4 h.p. engine; Nautilus, \$177 with the same equipment; Firefly, \$219 with 8 h.p. motor, and Nautilus, \$238 with this power plant.



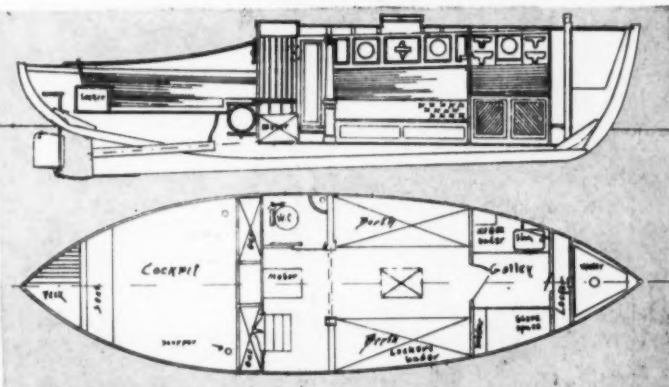
Robertson Bros'. 47-foot bridge-deck cruiser.



A western cruiser made by the Ripley Steel Boat Works.



The Cape Cod Power Dory Co.'s stock cruiser.



The compact cruiser of the Howard Boat Works.



The Peterborough knock down boats are easily put together.



Nautilus, a 20-footer made by the Brein Marine Works.



A Racine-Truscott 14-mile day cruiser.

Stock Motor Boats.



Tiny Tad, a Bath cruiser built from the knockdown frame.



A 45-foot Elco cruiser which sleeps eight people.



A handsome cruiser made by the Defoe Boat and Motor Wks.



The Milton Boat Works' able 31-foot cruiser.



A V-bottom day cruiser made by Wm. H. Hand, Jr.



The 35-foot cruiser built by Oscar Anderson.

Viper Sea Sleds.

The Viper Co., Ltd., Pictou, N. S., builders of the famous Viper boats, have added a new model to their line which was fully described in a recent issue of this magazine recently. It is known as the Viper V model, and is of the usual inverted V type employed by this company, with the sections shaped somewhat like a W and the bottom veed upward most sharply at the bow and flattening out aft. It is because of this peculiarity of design that it gets its name of Sea Sled. It is said of these boats that they throw practically no spray and that in a following sea there is no sense of insecurity, as the case with the conventional hydroplanes and the displacement speed boats. The engine installation in this craft is quite as unique as the shape of its hull, for the motor is mounted level, with the propeller shafts running along the bottom of the boat and out through the transom right on the waterline. The propellers are of the surface type—that is, only the tips of the blades are immersed and at no time are there more than two blades of each wheel touching the water. Placing the propellers in this way not only eliminates the resistance of the shaft and strut which are necessary in the conventional boats, but it materially decreases the draft. Side plate rudders actuated by positive rack and pinion are used, and it is claimed that these in no way affect her speed or weedless qualities. These boats attain a high rate of speed and can be used for hours at a stretch as automobiles are used.

The Miller Auto Boats.

The Miller Boat Company, of Michigan City, Ind., specialize on a 25-foot automobile boat, which has a beam of 5 feet 2 inches and a draught of 19 inches beneath the propeller. The construction throughout is of the finest and the fastenings are all either copper or brass. The boat is finished on deck and in the cockpit with mahogany. It is equipped with a 4-cycle, 4-cylinder motor with reverse gear and rear starter, and is placed under the forward deck with controls on the bulkhead. Equipped with cushions, linoleum on the cockpit floor, and mooring lines the boat sells for \$685.

A 20-Foot Canoe Launch.

D. M. Morris, of Veazie, Maine, the manufacturer of the Morris canoes, is putting out a 20 x 3 foot canoe launch with coaming around the forward part of the cockpit and with decks forward and aft. Like the paddle canoes this boat is built with cedar planking under stretched canvas, and has a slat flooring with two thwarts. The boats can be equipped with engines ranging in power from 3 to 7 and in the 1, 2, or 3-cylinder types, developing speeds from 9 to 14 miles per hour. The prices range from \$210 to \$300 and the boats are suitable for use in protected waters.

Defoe Stock Cruiser.

The Defoe Boat & Motor Works, Bay City, Mich., put out a very extensive line of stock cruisers in both the knock-down and completed form. One of their most popular models is a 37-footer which can be finished and fitted out in every way and tested out in the water for a total price of \$1,800. The keel, stem, stern timber, deadwoods, and frames are of seasoned white oak and the planking is of clear red Louisiana cypress, clinch nailed to the ribs, with all fastenings countersunk and puttied over with a special marine putty.

The interior arrangements plan allows for a stateroom forward, engine-room, galley, toilet room, and main cabin. The stateroom in the bow of the boat is artistically paneled and finished in white enamel. Single berths are arranged on each with ample storage space beneath. It is lighted by four polished brass port lights of the swing pattern and is reached from the bridge deck through a companionway with sliding hatch of the usual pattern. The engine-room is next aft, and the motor is accessible for repairs through a hatch in the bridge deck. The hatch is covered by trap doors conveniently arranged and easily handled. In the motor compartment there is found room for two fuel tanks of 50-gallon capacity each, as well as locker space, refrigerator, and electric lighting plant. The galley is finished in white enamel and equipped with the usual galley fittings consisting of stove, sink, and locker space. Doors communicate with the refrigerator space. Fresh water is piped to the copper sink from the tank in the bow of the boat. The toilet room, located opposite the galley, is artistically paneled in oak, and is finished in the natural wood with the best spar varnish or stained any desired color. Marine closet and porcelain lavatory comprise the equipment. The cabin occupies the remainder of the space below decks and communicates with the cockpit through a companionway aft. China cupboards with glass fronts are arranged on both sides of the companionway and seats run forward along the sides of the boat. These seats are of the extension type and at night serve as double berths. In the daytime the berths are folded up and the mattresses are used for the backs. The cushions are covered with Chase leather and filled with Kapoc, making soft and durable cushions which will stand up under service. Lockers are arranged under the seats and drawers are built in the lower parts of the china cupboards aft.

The after cockpit is fitted with seat across the after end, and scuppers which make it self-bailing. The amidships cockpit is covered with canvas awnings upon enameled pipe frame, and fitted with side curtains. Steering is done from the bridge deck to which are brought the motor controls. The power plant consists of a 3-cylinder 15 h.p. Stork motor, which gives the boat a cruising speed of 9 miles per hour, and, it is claimed, a cruising radius of 500 miles with a tank capacity of 100 gallons, which is very unusual for a boat of this type.

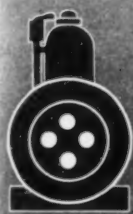
Milton Stock Cruiser.

The Milton Boat Works, at Rye, N. Y., although builders of boats to order, are now turning out in their slack season a stock raised deck cruiser with dimensions of 3 feet by 8 feet beam by 2 feet 8 inches draft. The general appearance is very attractive and she is a splendid sea boat, easily driven in all waters, being similar to Elmo II, famous for long distance racing. The construction is heavy, well planned, and the material and workmanship are first class. The interior finish is in cypress, finished bright, and all outside fittings and trims are of mahogany. The boat will be sold without power or with any suitable engine desired, but the standard boat is powered with either a 12 h.p. Bridgeport or a 20 h.p. Sterling engine.

Another interesting boat put out by this company is a handsome runabout, 32 feet 6 inches in length, 5 feet 6 inches beam and a draft of only 15 inches. Equipped with a 3-cylinder 12 h.p. Ferro engine having rear starter and reverse gear the boat is controlled from the automobile steering wheel on which gas and spark controls are mounted. The helmsman's seat extends across the boat and is comfortably cushioned, while a seat at the after end of the cockpit and several easy chairs make the boat an extremely comfortable one. The construction throughout is of the highest class, and all fittings which come in contact with the water are brass, bronze, or copper to withstand the action of salt water. A Patterson trap ventilator in the forward deck admits air to the engine compartment, but keeps out the water. Another model which this company offers is a clinker-built yacht tender of high-grade construction. Twelve feet in length, it is framed with oak, planked in cedar with gunwales, thwarts, etc., of mahogany, and makes a good looking little boat.

Anderson Knock Down Boat Frames.

Oscar Anderson, of Norwalk, Conn., builder of high grade motor boats in complete form of any style up to 75 feet in length, is also supplying knock down boat frames or models in any stage of construction. All frames are made of Eastern oak, and none but skilled mechanics are employed, which guarantees that their products are of the best workmanship. Mr. Anderson sets up his knock down frames just as if he were going to complete the boat, each part being carefully fitted before knocking down, which makes them very easy to set up again, following his instructions. Extra heavy frames are used in all boats and shaft holes are bored and rabbets cut ready to receive the planking. The regular stock boats include everything from an 18-footer complete with a 1½ h.p. motor, up to a 30-footer with a 7 h.p. motor for \$625, or the hull complete ready for the motor for \$375. A specialty is also made of raised deck cruisers, half-glass cruisers, oyster boats and lap strake tenders.



AMERICAN MARINE MOTORS



The Growth of the Engine Industry.

Some of the Things Which Have Happened Within the Last Few Years and Their Effect.
The New Fields Which Are Being Developed and the Markets Offered for American Motors.

By A. F. Dohn.

TO THOSE of you who belong to that good old company of gasoliners whose memory of the sport goes back some ten or fifteen years, it will be no trouble to think of a dozen innovations which have resulted in epoch-marking effects upon the engine itself, but it is not so much to these changes—like the introduction of electrical equipment and mechanical lubrication—that I refer, as it is to the ever-changing tendencies of the market—the coming and going of certain classes of business with very little apparent cause. It is not so much the question of what kind of an engine to build, as what kind of an engine *not* to build, that makes designers gray, or bald, according to their natural tendencies.

For, be it known that the production of new engine models is not the favorite pastime of manufacturers, as some people seem to think. It is an undertaking fraught with pain and hardship—financial, mental and, sometimes, physical. Before putting a new engine on the market, involving, as it does, the expenditure of thousands of dollars, and the risk of a reputation which it may have taken years to build up, the producer will think a long time, and he must know for sure that he is right before he goes ahead. More than lucky is the engine factory which has no skeleton in its storeroom, a grim monument to the failure of its builders to gauge the public taste just right.

Now, consider, for a moment, some of the things which have happened in motor boating history and their effect upon the development of the engine business. Let your memory run back ten or fifteen years and what do you see? Little pop-gun motors—10 h.p. was a big average engine in those days. The engines were used almost exclusively in pleasure boats. All things considered, they ran remarkably well, as is evidenced by the fact that some of them are running yet, but who could see in those little motors the foundation of the marine engine industry as it exists to-day? Certainly the men who built them did not.

Right here we have scene 1 in this kinetographic picture. The launch era is on. The open boat—the one which took the whole family out on Saturday afternoon and held them spellbound with its dizzy speed of seven miles an hour—is the typical motor boat of the day. The engine manufacturer must meet the demand. He must supply just the right kind of an engine for this kind of a boat. Consequently, jigs, templates and other tools, suited to the making of engines of just this sort, were installed in all the engine factories of that day, which, fortunately, were few. Then the scene shifts.

Enter the cruising boat. This was the direct descendant of our little friend, the open launch and the cabined sailing craft. That Saturday afternoon trip with the family was getting irksome, and Mr. Boatman yearned for a snug little ship on which he could cruise at weekends without the possibility of not being able to get back on time, which was the disadvantage of the sail boat. Of course, this kind of a boat called for a different kind of an engine, so, behold the coming of the slow-speed, heavy-duty type, while the manufacturers dig down for more tools and machinery.

It was about this time that Speed Demon got his tentacles first fixed on the marine engine industry. Those little boats which used to go out so quietly on Saturday afternoons had developed the naughty habit of racing. It was good sport. Everyone liked it, particularly the engine men, for each time John Smith was badly beaten by Bill Jones, he must either own up to his defeat, or buy a faster engine and go after him again. Of course, that would mean that Jones would have to buy a new engine, too, so that he could get back at Smith. It was splendid sport. We used to love to watch those races.

But, bye and bye, the engine builders began to feel the shoe pinching. Of course, we all built speed engines by that time, but our business was *selling engines*, not racing them, and we wanted to stick to the part that paid, rather than to spend thousands and thousands of dollars bringing out new models, simply for the personal satisfaction of showing that each one could build them faster than the others. A rather peculiar situation had arisen: John Smith had persisted in his efforts to beat Bill Jones, buying a new engine every time he was beaten, until he worked up to the highest-powered speed engine built by his favorite manufacturer. "You'll have to put out a faster model," was his ultimatum to the manufacturer; "you can't afford to admit that your high-speed wonder can be beaten."

And the joke of it was that the manufacturers believed it. They used up brains and money unstintingly to put a couple of miles per hour on the speed of their racing engines, only to find, by the time the new model was out, that someone else had beaten them to it with an additional 30 seconds. They no longer smiled behind their hands at the speed boat "bug"—the Speed Demon had got them, too!

Only yesterday 30 miles an hour was wonderful. To-day one must do better than 57 miles to get into fast company, but most of the manufacturers have ceased to worry over the really fast boats. True, most of them build

racing engines, but they stop short of the freak type. The influence of the Speed Demon upon the engine industry is almost done.

You have seen from the foregoing some of the events which have kept the manufacturers at a break-neck scramble in order to keep up with the times, but there have been hundreds of others, all calling for new designs, new tools. Just as an example, take the controversy as to the relative advantages of the long and short stroke. Not so long ago the public taste ran toward engines having a piston stroke shorter than the bore of the cylinder. Now, the longer stroke is in vogue. This change was due to a bit of European legislation, though few Americans know it. In England they fix the tax on motors according to the bore of the cylinder. Consequently, the longer stroke the British builder puts on his engine the more power he has, but the tax is just the same. The result is that more time has been spent on the development of the long stroke motor abroad, and American manufacturers have followed the general trend just as my lady's hat follows the Paris models.

Then there has been the matter of ignition. Formerly, everything was low tension. Now, the style has veered around to high tension. Consequently the builders have been forced to supply either kind, according to the wishes of the buyer. A small matter you will say, but when you are making your plans for a whole year it is a mighty important thing to know whether the bulk of your equipments are to be high or low tension.

The latest turn that the marine engine business has taken is toward the commercial boat, and, from present appearances, it is a market which will never fail. Every year sees an increase in the percentage of work boats powered with internal combustion engines, and the number will grow more rapidly as the owners demonstrate to their friends and competitors that a gas engine is a money earning device. The market is practically without limit. Think of the market there is in the fishing fleets of the world alone, and then multiply this number of possible gas engine users by the number of similar industries where they could be employed to good advantage. These work boat owners do not demand that the engine builder shall supply them with a power plant which will drive their boats through the water faster than anything has gone before. They simply ask that the engine shall be capable of continued hard work, absolutely reliable, and economical in its operation.

Another field which is developing rapidly
(Continued on page 162)

Index to Tables of Marine Motors.

An Alphabetical List of the Makes of Motors Included in the Classified Table
With the Names and Addresses of Their Manufacturers.

In the left hand of the three columns will be found the names of all the motors included in the classified table which appears in the following fourteen pages. Opposite each is the name and address of the manufacturer. In the larger table following, the motors are arranged according to type and design, so that the buyer may easily locate all makes of motors in the class that will meet his requirements.

Name of Motor	Manufacturer and Address.	Name of Motor	Manufacturer and Address.	Name of Motor	Manufacturer and Address.
Achilles	Atkin-Wheeler Co., Huntington, L. I.	Guarantee	Guarantee Motor Co., Hamilton, Ont., Canada.	Pilot	Trump Bros. Mach. Co., Wilmington, Del.
American	American Engine Co., Detroit, Mich.	Hall	Hall Gas Engine Co., Inc., Bridgeburg, Philadelphia, Pa.	Portage	Portage Boat & Eng. Co., Portage, Wis.
American Boy	Bruno-Kimball & Co., New York.	Hallin	Hallin Gas Eng. & Boat Co., Tacoma, Wash.	R-V	Raymond Engineering Co., Inc., Boston, Mass.
Anderson	Anderson Engine Co., Chicago, Ill.	Harkless	Lakeside Motor Works, Syracuse, Ind.	Ralaco	S. M. Jones Co., Toledo, Ohio.
Aristox	Black Rock Machine Co., Bridgeport, Conn.	Harris	Delaware Machine Works, Wilmington, Del.	Rathbun	Rathbun-Jones Eng. Co., Toledo, Ohio.
Armstrong	Lachine Motor Works, Lachine, Que., Canada.	Hartford	Gray & Pryor, Hartford, Conn.	Red Wing	Red Wing Motor Co., Red Wing, Minn.
Automatic	Automatic Machine Co., Bridgeport, Conn.	Heer	Heer Eng. Co., Portsmouth, O.	Regal	Regal Gasoline Engine Co., Coldwater, Mich.
Barber	Barber Bros., Syracuse, N. Y.	Heinel	H. A. Heinel Co., Wilmington, Del.	Reliance	Reliance Motor Boat Co., New York City.
Barker	C. L. Barker, Norwalk, Conn.	Hettinger	Hettinger Eng. Co., Bridgeton, N. J.	Remington	Remington Oil Eng. Co., Stamford, Conn.
Belle Isle	Concrete Form & Eng. Co., Detroit, Mich.	Hines	H. E. Hines Motor Co., Traverse City, Mich.	Rex	Rex Motor Co., Boston, Mass.
Bevier	Bevier Gas Engine Co., Kalamazoo, Mich.	Hitchcock	Hitchcock Gas Engine Co., Bridgeport, Conn.	Roberts	Roberts Motor Co., Sandusky, Ohio.
Brennan	Brennan Motor Mfg. Co., Syracuse, N. Y.	Holmes	Holmes Motor Co., West Mystic, Conn.	Robert's Motor	Roberts Motor Works, Lachine, Que., Canada.
Bridgeport	Bridgeport Motor Co., Bridgeport, Conn.	Honest Injun	The Byers Co., Ltd., Toronto, Ont., Canada.	Robinson	Robinson Motor & Steel Boat Wks., Lindsay, Ont., Can.
Brown	B. F. Brown Gas Eng. Co., Schenectady, N. Y.	Hoosier	Hoosier Motor Co., Goshen, Ind.	Rutenber	Rutenber Motor Co., Marion, Ind.
Brown-Collins	Brown-Collins Gas Eng. Co., Hartford, Conn.	Ideal	V. J. Emery, Wollaston, Mass.	S. H. M.	Schofield-Holden Machine Co., Toronto, Ont., Canada.
Brown-Talbot	Brown-Talbot Machinery Co., Salem, Mass.	Imperial	Bruce Stewart & Co., Ltd., Charlottetown, P. E. I., Can.	S & H Motor	Perkins Bros., Havana, Ill.
Buda	Buda Company, Harvey, Ill.	Ithaca	Champaign Bros., Ithaca, N. Y.	St. Lawrence	St. Lawrence Eng. Co., Ltd., Brockville, Ont., Canada.
Bud-E	Carlisle Johnson Mach. Co., Manchester, Conn.	Jager	Jager Eng. Co., Boston, Mass.	Sagamore	Sagamore Motor Works, West Lynn, Mass.
Buffalo	Buffalo Gasoline Motor Co., Buffalo, N. Y.	K. & D.	Seneca Falls Engine & Supply Co., Seneca Falls, N. Y.	Samson	Samson Iron Works, Stockton, Cal.
Cady of Canastota	C. N. Cady Co., Canastota, N. Y.	Kahlenburg	Kahlenburg Bros. Co., Two Rivers, Wis.	Sandow	Detroit Motor Car Supply Co., Detroit, Mich.
Caille Perfection	Caille Perfection Motor Co., Detroit, Mich.	Kemaco	Kent-Marvin Co., Bellingham, Wash.	Schaefer	Schaefer Mfg. Co., Berlin, Wis.
Cambon	West Seattle Machine Works, West Seattle, Wash.	Kennebec	Torrey Roller Bushing Works, Bath, Maine.	Schlosser	Schlosser Mfg. Co., N. Y. City.
Campbell	Campbell Motor Co., Wayzata, Minn.	Kermath	Kermath Mfg. Co., Detroit, Mich.	Scripps	Scripps Motor Co., Detroit, Mich.
Canadian Beaver	Canadian Beaver Co., Toronto, Ont., Canada.	Knox	Camden-Anchor Rockland Machine Co., Camden, Maine.	Smalley	Smalley General Co., Bay City, Mich.
Capitol	Auto Engine Works, St. Paul, Minn.	Kowalsky	Oakmount Motor & Boat Co., Oakmount, Pa.	Sparks	Sparks Boat & Eng. Co., Alton, Ill.
Carl	Carl Engine Works, Philadelphia, Pa.	Kuhner	Kuhner Engine Co., Oxford, O.	Speedway	Gas Engine & Power Co. and Chas. L. Seabury & Co., Cons., Morris Heights, N. J.
Clay	Clay Engine Co., Cleveland, O.	Kuhnert	L. U. Kuhnert, Jr., Co., Chicago, Ill.	Standard	Standard Motor Const. Co., Jersey City, N. J.
Clifton	Clifton Motor Works, Cincinnati, O.	La	Lockwood-Ash Motor Co., Jackson, Mich.	Standard	Standard Gas Eng. Co., San Francisco, Cal.
Clipper	Clipper Lawn Mower Co., Dixon, Ill.	Lathrop	J. Lathrop Co., Mystic, Conn.	Stanley	The Stanley Co., Salem, Mass.
Columbia	Columbia Engine Co., Detroit, Mich.	Lamb	Lamb Eng. Co., Clinton, Iowa.	Staten Island	Staten Island Shipbuilding Co., Port Richmond, N. Y.
Corliss	Corliss Gas Eng. Co., San Francisco, Cal.	Lacy	The Cleveland Ice Machine & Mfg. Co., Lorain, Ohio.	Sterling	Sterling Engine Co., Buffalo, N. Y.
Cragg	Gilmore Cragg Motor Mfg. Co., Detroit, Mich.	La Salle	Truscott Boat & Auto Supply Co., St. Joseph, Mich.	Stork	DeLoe Boat & Motor Works, Bay City, Mich.
Craig	James Craig Engine & Machine Works, Jersey City, N. J.	Lawley-Heavy Duty	Geo. Lawley & Son Corp., Neponset, Mass.	Strang	Strang Eng. Co., Harvey, Ill.
Crown "Special"	H. E. Dantzbecher, Philadelphia, Pa.	Leary	Leary Gasoline Engine Co., Rochester, N. Y.	Strelinger	Strelinger Marine Eng. Co., Detroit, Mich.
De Mooy	De Mooy Bros., Cleveland, O.	Leighton	H. J. Leighton, Syracuse, N. Y.	T & M	Termaat & Monahan Co., Oshkosh, Wis.
Detroit	Detroit Engine Works, Detroit, Mich.	Liak	Geo. A. Liak, Detroit, Mich.	Toledo	Universal Machine Co., Bowling Green, O.
Dice	Dice Eng. Co., Anderson, Ind.	Loew-Victor	Loew-Victor Engine Co., Chicago, Ill.	Toppan	Toppan Boat Mfg. Co., Boston, Mass.
Doak	Doak Gas Eng. Co., Oakland, Cal.	Long	DeLong Engine Co., Webster, Mass.	Toronto	Schofield-Holden Machine Co., Toronto, Ont., Canada.
Doman	H. C. Doman Co., Oshkosh, Wis.	McKeough & Trotter	McKeough & Trotter, Chatham, Ont., Canada.	Trebert Reliance	H. L. F. Trebert Eng. Wks., Rochester, N. Y.
Duryea	Duryea Motor Co., Saginaw, Mich.	Majestic	Milwaukee Auto Engine Supply Co., Milwaukee, Wis.	Truscott	Racine-Truscott Shell Lake Boat Co., Racine, Wis.
Eagle	The Standard Co., Torrington, Conn.	Maximotor	Maximotor Makers, Detroit, Mich.	Tuttle	Tuttle Motor Co., Canastota, N. Y.
Eclipse Special	Traverse City Iron Works, Traverse City, Mich.	Mercury	Mercury Motor Co., Produce Exchange, New York City.	Twentieth Century	N. Y. Yacht, Launch & Eng. Co., Morris Heights, N. Y.
Elbridge	Gear & Miller, Rochester, N. Y.	Mianus	Mianus Motor Works, Stamford, Conn.	Tygar	"The Tygar Engine," Plainfield, N. J.
Eddystone-Globe	Pennsylvania Iron Works, Eddystone, Pa.	Mietz & Weiss	August Mietz, 138 Mott St., New York City.	Uncle Sam	Stationary & Marine Motor & Supply Co., Port Washington, L. I.
Elec	Elco-Bayonne, Bayonne, N. J.	Missouri	Missouri Engine Co., St. Louis, Mo.	Valentine	T. J. Valentine, 178 Vermont St., Buffalo, N. Y.
Elk	Elk Motor Co., Muscatine, Ia.	Mohawk	S-R Mfg. Co., Schenectady, N. Y.	Valveless	Nichols & Wright Motor Co., Buffalo, N. Y.
Ellsworth	Ellsworth Foundry & Machine Works, Ellsworth, Maine.	Monarch	Grande Rapids Gas Eng. Co., Grand Rapids, Mich.	Van Blerck	Van Blerck Motor Co., Monroe, Mich.
Erd	Erd Motor Co., Saginaw, Mich.	Monitor	Monitor Boat & Engine Co., Newark, N. J.	Van Epps	VanEpps Motors, Syracuse, N. Y.
Essex	Essex Engine Co., Lynn, Mass.	Morristown	Morristown Boat & Eng Wks., Morristown, N. Y.	Vanguard	George E. Belcher, Stoughton, Mass.
Evansville	C. P. Minget Co., Evansville, Ind.	Morton	Morton Motor Co., Detroit, Mich.	Vim	Vim Motor Co., Sandusky, O.
Evinrude	Evinrude Motor Co., Milwaukee, Wis.	Murray & Tregurtha	Murray & Tregurtha Co., South Boston, Mass.	Vulcan	Vulcan Eng. Wks., Philadelphia, Pa.
Fadum	Frederick Fadum & Sons, Baltimore, Md.	Nancy Lee	Rockingham Machine Works, Kittery, Maine.	Waterman	Waterman Marine Motor Co., Detroit, Mich.
Fairbanks-Morse	Fairbanks-Morse & Co., Chicago, Ill.	Niagara	Niagara Gasoline Motor Co., Buffalo, N. Y.	Watertown Special	Watertown Motor Co., Watertown, N. Y.
Fairbanks-Victor	The Fairbanks Co., Boston, Mass.	Nichols	Nichols Power Co., West Waterville, Stamford, Conn.	Watkins	The Watkins Motor Co., Cincinnati, O.
Fay & Bowen	Fay & Bowen Engine Co., Geneva, N. Y.	Nieland	J. E. Nieland Co., San Francisco, Cal.	Weco	C. T. Wright Eng. Co., Greenville, Mich.
Ferro	Ferro Machine & Foundry Co., Cleveland, O.	Northwestern	Northwestern Motor Co., Eau Claire, Wis.	Westman	Enterprise Machine Co., Minneapolis, Minn.
Fisherman	Loane-Hiltz Eng. Co., Baltimore, Md.	Ontario	A. E. Olmstead-Ontario Iron Works, Pulaski, N. Y.	Willet	Willet Eng. & Truck Co., Buffalo, N. Y.
Fox	Dean Mfg. Co., Newport, Ky.	Oriele	Page Engineering Co., Baltimore, Md.	Winton	Winton Gas Eng. & Mfg. Co., Cleveland, Ohio.
Fraser	Fraser Mch. Motor Co., New Glasgow, N. S.	Oxford	L. D. Robbins Co., Lynn, Mass.	Wisconsin	Wisconsin Motor Mfg. Co., Milwaukee, Wis.
Frazer-Adams	Frazer Bros. Co., Adams, N. Y.	Palmer	Palmer Bros., Cos Cob, Conn.	Wisconsin Valveless	Wisconsin Mch. & Mfg. Co., Milwaukee, Wis.
Frisbie	Frisbie Motor Co., Middletown, Conn.	Pearl	A. A. Ormsbee & Co., Taunton, Mass.	Wolverine	Wolverine Motor Wks., Bridgeport, Conn.
Fulton	Fulton Mfg. Co., Erie, Pa.	Peerless	Peerless Marine Motor Co., Buffalo, N. Y.	Wonder	Wonder Mfg. Co., Syracuse, N. Y.
Gilmore	Gilmore Motor Mfg. Co., Detroit, Mich.	Phillips-Duplex	L. C. Kuhnert, Jr., Co., Chicago, Ill.	Wood & Chute	Wood & Chute Machine Co., Greenport, L. I.
Gladish	Gladish Bros. Machine Works, Chattanooga, Tenn.	Pierce-Budd	Pierce-Budd Co., Bay City, Mich.	Yale	Heaps Engineering Co., Ltd., New Westminster, B. C.
Globe	Pennsylvania Iron Wks., Eddystone, Pa.				
Grassier	Grassier Motor Co., Toledo, O.				
Gray	Gray Motor Co., Detroit, Mich.				
Griazly Bear	Parrott & Harter Eng. Wks., Olympia, Wash.				

Two Cycle Motors

On the following 14 pages will be found the most complete tabulation of American Marine Motors ever published, showing in detail the specifications of over 1700 motors. These are arranged in order of their rated horsepower, starting from the single cylinder

Heavy Duty

R. P. M. 500 and Less.

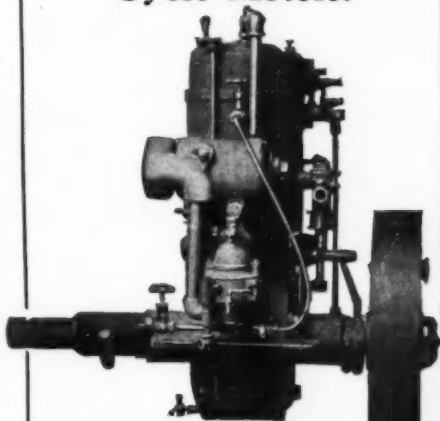
motor of 1 1-2 H. P., and continuing up to the multi-cylinder engine of large power. These are subdivided according to the number of cylinders, and further subdivided into the groups of Heavy Duty, Medium Duty and Light Weight High Speed Engines.

Note.—Weight shown is without reverse gear. * indicates weight with reverse gear. ‡ indicates reversible motor.

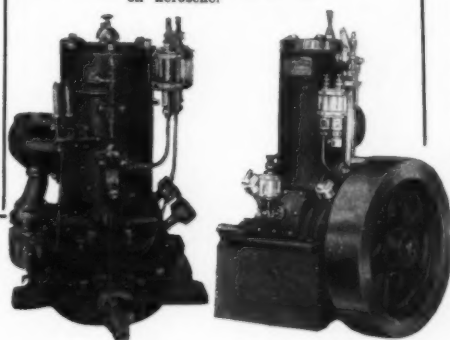
One Cylinder.

RATED H. P.	MAKE	BORE AND STROKE	R.P.M.	WT.
1 1/2	Fairbanks-Victor	3 1/2 x 3 1/2	500	94
2	Palmer	3 1/2 x 3 1/2	500	135
2	Uncle Sam	3 1/2 x 3 1/2	400	140
2 1/2	Bridgeport	3 3/4 x 4	500	140
2 1/2	Ellsworth	4 x 4	500	326
2 1/2	Fairbanks-Victor	3 3/4 x 4	500	130
3	Essex	4 x 4 1/2	500	175
3	Fairbanks-Victor	3 3/4 x 4 1/2	500	180
3	Kennebec	4 1/2 x 4 1/2	500	226
3	Lathrop	4 x 4	500	150
3	Stanley	4 x 3 1/2	500	175
3	Uncle Sam	4 x 4 1/2	400	175
3 1/2	Ellsworth	4 x 4 1/2	500	425
3 1/2	Palmer	4 1/2 x 4 1/2	400	240
3 1/2	Vim	4 x 4	450	105
4	Bridgeport	4 1/2 x 5	500	200
4	Fairbanks-Victor	4 1/2 x 5	500	210
4	Imperial	4 x 3 1/2	500	170
4	Lacy	4 1/2 x 4 1/2	500	225
4	Lathrop	4 1/2 x 5	500	200
4	Uncle Sam	4 1/2 x 5 1/2	400	275
4 1/2	Ellsworth	4 1/2 x 4 1/2	450	500
4 1/2	Essex	4 1/2 x 5 1/2	500	267
5	Bridgeport	5 x 5 1/2	500	260
5	Camdon	5 x 5	350	480
5	Fairbanks-Victor	5 x 5 1/2	500	275
5	Hallin	5 1/2 x 7	400	500
5	Imperial	4 1/2 x 4	500	230
5	Kennebec	5 x 5	500	297
5	Lathrop	5 3/4 x 6 1/2	500	300
5	Mianus	4 1/2 x 5	500	280
5	Mietz & Weiss	4 1/2 x 6 1/2	500	650†
5	Sagamore	4 1/2 x 5	500	250
5	Speedway	4 1/2 x 5	500	330†
5	Stanley	4 1/2 x 5	500	251
5 1/2	Wood & Chute	5 x 5	500	365
6	Ellsworth	5 1/4 x 5 1/4	450	480
6	Essex	5 x 6	500	365
6	Kahlenberg	5 x 5	500	400
6	Lacy	5 x 5 1/2	450	375
6	Lathrop	5 1/2 x 5	500	325
6	Lathrop	5 1/4 x 6 1/2	450	500
6	McKeough & Trotter	5 x 5	500	300
6	Mietz & Weiss	6 x 6 1/2	460	1180‡

Single-Cylinder Two-Cycle Motors.

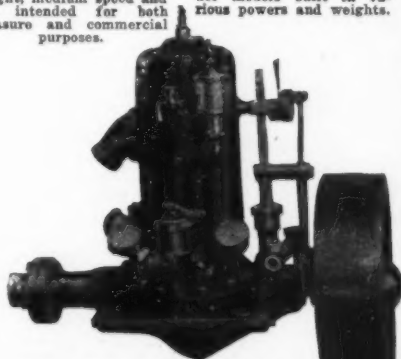


Knox motors for 1914 will be fitted with the Model "E" carburetor, which will enable the operator to use kerosene under all conditions and in ordinary weather to start the motor cold on kerosene.



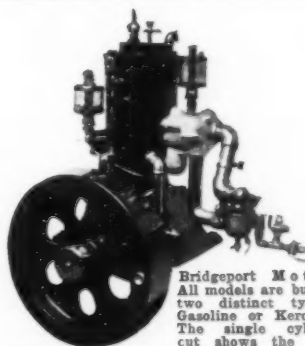
The Stanley motors are of the two-cycle, single and double cylinder type. They are of medium weight, medium speed and are intended for both pleasure and commercial purposes.

Single cylinder Lathrop 2-cycle engine, built for hard continuous service. One, two or three-cylinder models built in various powers and weights.

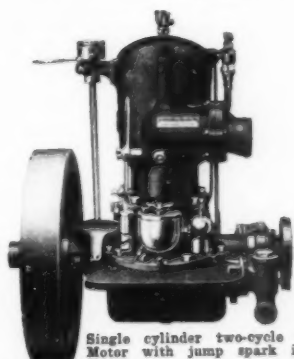


Single cylinder Grassie motor of the two-cycle type, built in four sizes from two to fifteen horsepower.

The captions below the cuts of the motors shown in this department are epitomized descriptive statements furnished by their makers.

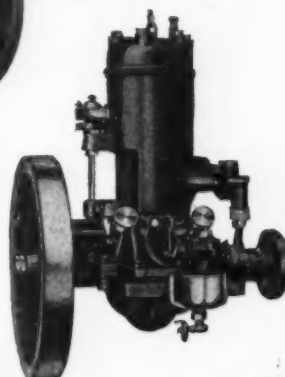


Bridgeport Motor. All models are built in two distinct types—Gasoline or Kerosene. The single cylinder cut shows the kerosene type.



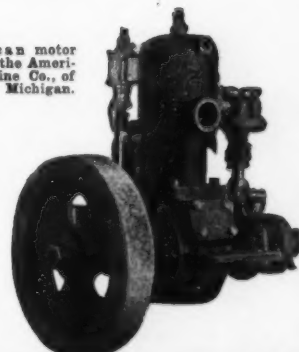
Single cylinder two-cycle Gladish Motor with jump spark ignition.

RATED H. P.	MAKE	BORE AND STROKE	R.P.M.	WT.
6	Oriole	4 1/2 x 5	475	390
6	Sagamore	4 1/2 x 5	500	260
6	Uncle Sam	5 1/4 x 6	400	375
6	Vim	5 x 5	450	270
6	Wood & Chute	5 1/2 x 5	500	414
6 1/2	Barker	5 1/2 x 6 1/2	450	350
7	Bridgeport	5 1/2 x 6	450	420
7	Brown-Talbot	5 1/2 x 6	500	300
7	Camdon	5 1/2 x 6	350	570
7	Eagle	6 x 6 1/2	400	490
7	Fairbanks-Victor	6 x 6 1/2	500	425
7	Guarantee	5 x 5	...	350
7	Hallin	6 1/2 x 7	400	800
7	Hallin	5 1/4 x 6	500	250
7	Kahlenberg	5 x 6	500	500
7	Lathrop	6 x 6 1/2	375	575
7	Ontario	5 x 5	450	300
7	Remington Oil	5 1/2 x 6	500	700
7	S. & H. Motor	5 x 5	500	275
7 1/2	Ellsworth	6 x 6 1/2	450	575
7 1/2	Mianus	5 9/16 x 6	450	415
7 1/2	Sagamore	5 1/2 x 5 1/2	475	300
7 1/2	Stanley	5 1/2 x 5	425	350
7 1/2	Wood & Chute	6 x 6	450	513
8	Canadian Beaver	5 x 5	500	225
8	Columbia	5 1/4 x 5	500	300
8	Essex	6 x 6	450	420
8	Kennebec	6 1/2 x 7	400	610
8	Kahlenberg	5 1/2 x 6	500	350
8	Lathrop	6 1/2 x 6 1/2	350	500
8	Oriole	5 1/2 x 6 1/2	450	425
8	Sandow	5 1/4 x 5	400	350
9	Bridgeport	6 1/2 x 6 1/2	400	495
9	Fulton	5 1/2 x 6	500	330
9	Guarantee	5 1/2 x 5	...	425
9	Kahlenberg	6 x 6	450	650
9	Uncle Sam	6 1/4 x 7	400	580
10	Barker	6 1/2 x 8	400	500
10	Brown-Talbot	7 x 6	400	500
10	Hallin	6 1/2 x 7	430	325
10	Lathrop	7 x 7 1/2	300	850
10	Mianus	6 1/2 x 7	375	675
10	Oriole	6 1/2 x 6 1/2	425	540
10	Remington Oil	6 1/4 x 6	500	725
10	Tuttle	6 x 5 1/2	500	280
11	Remington Oil	7 x 8	400	1275
12	Barber	6 1/2 x 6 1/2	500	400
12	Hallin	6 1/2 x 7	400	600
12	Kahlenberg	6 1/2 x 7	425	750
12	Lathrop	7 1/2 x 7 1/2	275	900
12	Monitor	6 1/4 x 6 1/2	500	440
12	Sagamore	7 x 7	450	550
15	Kahlenberg	7 x 8	400	900
17	Remington Oil	8 1/4 x 8	400	1407
20	Sagamore	8 x 7 1/2	450	650

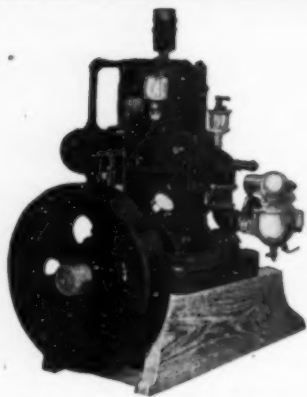


Model K. 3 1/2 h.p. High Speed Eagle. Fitted with new type of connecting rod, insuring perfect lubrication of crank pin bearing. Models K and O are of same general construction.

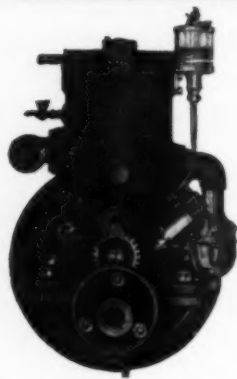
American motor built by the American Engine Co., of Detroit, Michigan.



Two-Cycle Motors.



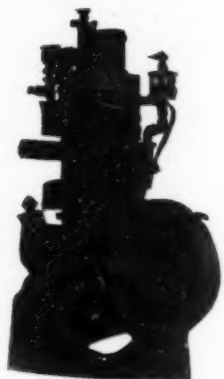
Monitor Single Cylinder, 2-cycle, reversing, business engine. This engine positively reverses without a reverse gear, and is suitable for boats up to 30 x 8 feet.



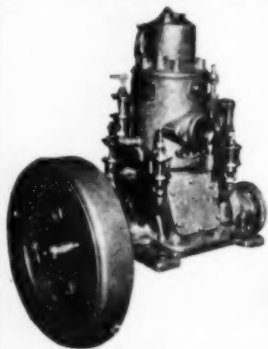
Single cylinder Brown-Talbot engine of the medium duty type, built by the Brown-Talbot Machinery Co., of Salem, Mass.



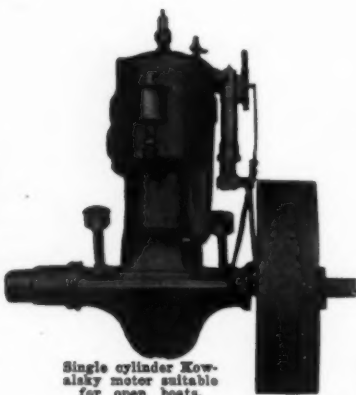
Uncle Sam Marine Engines are what are known as the heavy duty 2-cycle, three port. Bronze bearings throughout.



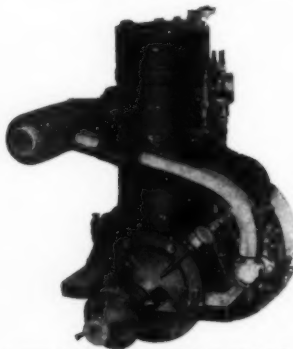
A small one-cylinder Mietz & Weiss kerosene motor built by August Mietz, of New York City.



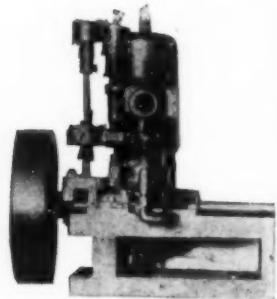
The 4 h.p. Stanley kerosene motor which operates without an electrical ignition system.



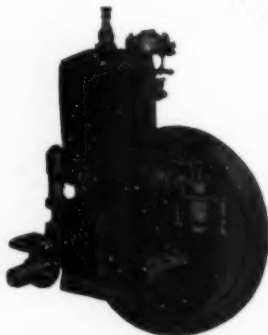
Single cylinder Kowalsky motor suitable for open boats.



The new Oriole kerosene-driven motor manufactured by the Page Engineering Company, Baltimore, Md., has passed the experimental stage—six months use all over the United States and abroad has resulted in a universal endorsement of their claims.



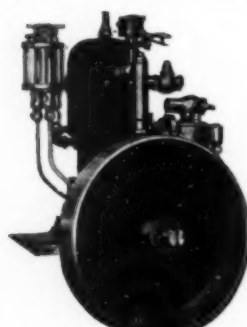
Single cylinder Brown-Collins two-cycle motor built by Brown-Collins Gas Engine Co., of Hartford, Conn.



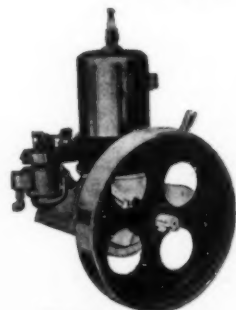
Belle Isle motor, manufactured by the Concrete Form & Engine Co., of Detroit, Mich.



Type V Barker motors are of the two-port, two-cycle type. With the exception of refinements the 1914 models are like the first machines of this kind which were built thirteen years ago.



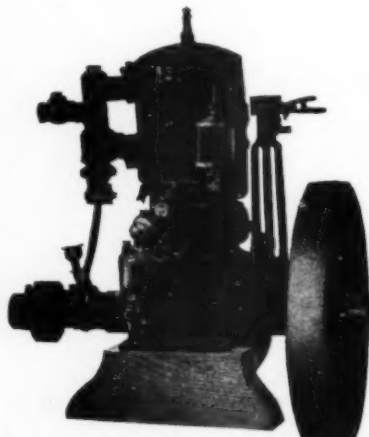
Waterman Model A-4 Special. A high-grade 4 h.p. engine at a popular price.



Waterman Model K-1. Eighth year of manufacture; light weight, high speed, perfectly balanced motor in one and two cylinders.

Two Cylinders.

RATED H. P.	MAKE	BORE AND STROKE	R.P.M.	WT.
6	Kennebec	4 1/2 x 4 1/2	500	305
6	Stanley	4 x 3 1/2	500	290
8	Bridgeport	4 1/2 x 5	500	375
8	Hallin	4 1/2 x 4 1/2	500	500
8	Harkless	4 x 4 1/2	500	285
8	Lacy	4 1/2 x 4 1/2	500	400
8	McKeough & Trotter	4 x 4	500	375
8	Uncle Sam	4 1/2 x 5 1/2	400	550
10	Bridgeport	5 1/2 x 5 1/2	500	470
10	Camdon	5 x 5	375	780
10	Hallin	5 1/2 x 5 1/2	450	600
10	Hallin	5 1/2 x 7	400	800
10	Imperial	4 1/2 x 4	500	320
10	Kennebec	5 x 6	500	425
10	Lathrop	5 3/16 x 5	500	475
10	Mianus	4 1/2 x 5	500	500
10	Mietz & Weiss	4 1/2 x 6 1/2	500	1250
10	Sagamore	4 1/2 x 5	500	500
10	Stanley	5 1/2 x 4 1/2	425	475
10	Wood & Chute	5 x 5	500	640
12	Eagle	5 x 6	450	555
12	Essex	5 x 6	450	640
12	Lacy	5 1/2 x 5 1/2	450	675
12	Lathrop	5 1/2 x 5	500	500
12	Lathrop	5 1/2 x 6 1/2	450	850
12	McKeough & Trotter	5 x 5	450	575
12	Oriole	4 1/2 x 5	475	500
12	Sagamore	4 1/2 x 5	500	520
12	Uncle Sam	5 1/2 x 6	400	670
12	Vim	5 x 5	450	410
12	Wood & Chute	5 1/2 x 5	500	744
14	Bridgeport	5 1/2 x 6	450	700
14	Brown-Talbot	5 1/2 x 5	500	450
14	Caille-Perfection	4 1/2 x 4 1/2	350	350
14	Guarantee	5 x 5	...	550



Single cylinder T. & M. engine, noted for its economical operation and ease of starting.

RATED H. P.	MAKE	BORE AND STROKE	R.P.M.	WT.
14	Hallin	6 1/2 x 7	400	1500
14	Lathrop	6 x 6 1/2	425	900
14	Remington Oil	5 1/2 x 6	500	950
15	Camdon	5 1/2 x 6	350	980
15	Eagle	6 x 6 1/2	400	780
15	Fairbanks-Victor	6 x 6 1/2	475	870
15	Fay & Bowen	5 1/2 x 5 1/2	500	760
15	Knox	5 1/2 x 6 1/2	500	750
15	Mianus	5 9/16 x 6	450	750
15	Mietz & Weiss	6 x 6 1/2	500	1850
15	Sagamore	5 1/2 x 5 1/2	475	600
15	Stanley	5 1/2 x 6	425	641
15	Wood & Chute	6 x 6	450	930
16	Kennebec	6 1/2 x 7	400	1000
16	Lathrop	6 1/2 x 6 1/2	400	950
16	Oriole	5 1/2 x 6 1/2	450	750
18	Bridgeport	6 1/2 x 7	400	900
18	Fulton	5 1/2 x 6	500	525
18	Guarantee	5 1/2 x 5	...	650
18	Kahlenberg	6 x 6	450	1100
18	Weco	5 x 5	500	450
20	Brown-Talbot	7 x 6	400	550
20	Fay & Bowen	6 1/2 x 6 1/2	475	1135
20	Lathrop	7 x 7 1/2	300	1200
20	Mianus	6 1/2 x 7	375	1170
20	Oriole	6 1/2 x 6 1/2	425	950
20	T. & M.	5 1/2 x 6	500	850
20	Tuttle	6 x 5 1/2	500	440
22	Remington Oil	6 1/2 x 6	500	1000
24	Barber	6 1/2 x 6 1/2	500	695
24	Kahlenberg	6 1/2 x 7	375	1300
24	Lathrop	7 1/2 x 7 1/2	275	1300
24	Monitor	6 1/2 x 6 1/2	500	440
24	Remington Oil	7 x 8	400	1850
24	Sagamore	7 x 7	450	1000
25	Guarantee	7 x 7	...	...
25	Uncle Sam	6 1/2 x 7	400	1100
30	Kahlenberg	7 x 8	400	1800

Two-Cycle Motors.

RATED H.P.	MAKE	BORE AND STROKE	R.P.M.	WT.
30	Mietz & Weiss	8 x 8	450	3050
30	Weco	7 x 7	500	900
30	Remington Oil	8 1/2 x 8	400	2000
30	Kahlenberg	7 1/2 x 8	400	2000
40	Barber	8 x 8	350	1950
40	Sagamore	8 x 7 1/2	450	1200
50	Mietz & Weiss	10 x 12	340	7000
55	Kahlenberg	9 x 10	375	3400

Three Cylinders.

RATED H.P.	MAKE	BORE AND STROKE	R.P.M.	WT.
12	McKeough & Trotter	4 x 4	450	625
15	Hallin	5 1/2 x 7	400	1200
15	Imperial	4 1/2 x 8	500	400
18	Lathrop	5 1/2 x 5 1/2	500	850
18	McKeough & Trotter	5 x 5	450	725
18	Vim	5 x 5	450	560
22	Knox	5 1/2 x 6 1/2	500	1200
22	Mietz & Weiss	6 x 6 1/2	500	2400
24	Remington Oil	5 1/2 x 6	500	1250
24	Lathrop	6 1/2 x 6 1/2	450	1500

RATED H.P.	MAKE	BORE AND STROKE	R.P.M.	WT.
27	Bridgeport	6 1/2 x 7	400	1300
27	Kahlenberg	6 x 6	475	1500
30	Mianus	6 1/2 x 7	375	2000
30	Tuttle	6 x 5 1/2	500	600
34	Fay & Bowen	6 1/2 x 6 1/2	500	1535
34	Remington Oil	6 1/2 x 6	500	1400
36	Barber	6 1/2 x 6 1/2	500	925
36	Kahlenberg	6 1/2 x 7	450	1700
36	Lathrop	7 1/2 x 7 1/2	275	2500
36	Monitor	6 1/2 x 6 1/2	500	1000
36	Sagamore	7 x 7	425	1400
37	Remington Oil	7 x 8	400	2500
45	Fay & Bowen	6 3/4 x 8	475	2900
45	Kahlenberg	7 x 8	400	2600
45	Mietz & Weiss	8 x 8	450	4300
54	Kahlenberg	7 3/4 x 8	400	2800
55	Remington Oil	8 3/4 x 8	400	2750
60	Barber	8 x 8	450	2850
60	Sagamore	8 x 7 1/2	400	1700
75	Mietz & Weiss	10 x 12	340	...
85	Kahlenberg	9 x 10	375	5000
150	Mietz & Weiss	14 x 18 1/2	240	...

Four Cylinders.

RATED H.P.	MAKE	BORE AND STROKE	R.P.M.	WT.
300	Mietz & Weiss	18 x 27	180	...
12	Ithaca	4 1/2 x 4 1/2	500	550
20	Hallin	5 1/2 x 7	400	1550
20	Imperial	4 1/2 x 4	500	550
25	McKeough & Trotter	5 x 5	450	950
28	Hallin	6 1/2 x 7	400	2800
30	Mietz & Weiss	6 x 6 1/2	500	3000
32	Remington Oil	5 1/2 x 6	500	1575
40	Ithaca	6 x 8	400	1500
40	Mianus	6 1/2 x 7	375	2925
46	Remington Oil	6 1/2 x 6	500	1800
48	Sagamore	7 x 7	425	1900
50	Oxford	6 x 8 1/2	450	1800
50	Remington Oil	7 x 8	400	3100
60	Mietz & Weiss	8 x 8	450	5580
70	Weco	7 x 7	500	1500
75	Remington Oil	8 1/4 x 8	400	3550
80	Sagamore	8 x 7 1/2	400	2300
100	Mietz & Weiss	10 x 12	340	...
200	Mietz & Weiss	14 x 18 1/2	240	...
400	Mietz & Weiss	18 x 27	180	...

2
Cycle

Medium Duty

2
Cycle

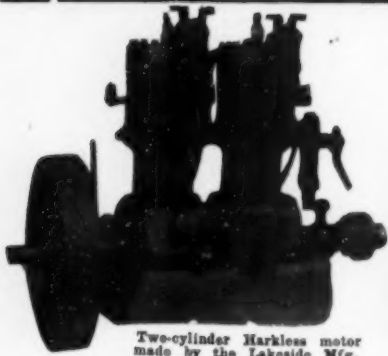
R. P. M. 501-800

One Cylinder.

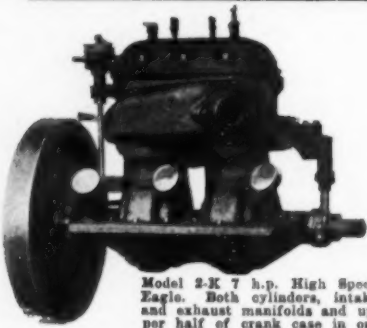
RATED H.P.	MAKE	BORE AND STROKE	R.P.M.	WT.
1	Eclipse Special	3 1/16 x 3	...	70
1 1/4	Gilmore	3 x 3 1/2	800	37
1 1/4	Barker	3 5/16 x 3 1/2	600	100
1 1/4	Brown-Collins	3 x 3	800	63
1 1/4	Cady of Canastota	3 x 3 1/2	700	45
1 1/4	Clay	3 x 3 1/2	800	45
1 1/4	Cragg	3 x 3 1/2	800	37
1 1/4	Eagle	3 x 3	600	95
1 1/4	Ithaca	3 x 3	800	50
1 1/4	L-A	3 x 3	750	70
1 1/4	McKeough & Trotter	3 x 3 1/2	800	55
2	American Boy	3 x 3	600	90
2	Caille-Perfection	2 1/2 x 2 1/2	800	55
2	Caille-Perfection	3 x 3 1/2	800	100
2	Clipper	3 1/4 x 4	800	165
2	Detroit	3 x 3 1/2	800	95
2	Harkless	3 x 3 1/2	650	...
2	Ithaca	3 1/2 x 3 1/2	800	100
2	K. & D.	3 x 3	650	175
2	Kennebec	3 1/2 x 4	600	132
2	Lacy	3 1/2 x 3 1/2	600	110
2	Little Giant	3 x 3 1/2	800	60
2	Northwestern	3 x 3	800	100
2	T. & M.	3 x 3 1/2	650	120
2	Toppan	3 x 3 1/2	600	120
2 1/2	Wisconsin Valveless	2 1/2 x 2 1/2	700	50
2 1/2	Barber	3 1/4 x 4	750	75
2 1/2	Barker	4 1/4 x 4 1/2	550	170
2 1/2	Belle Isle	3 1/4 x 4	800	73
2 1/2	Caille-Perfection	3 1/4 x 3 1/2	800	140
2 1/2	Eagle	3 1/4 x 4	375	160
2 1/2	Eclipse Special	3 1/2 x 3 1/2	...	...
2 1/2	Fay & Bowen	3 1/2 x 3 1/2	700	200
2 1/2	L-A	3 1/2 x 3 1/2	750	100
2 1/2	Sandow	2 1/2 x 3 1/2	800	99
2 1/2	Valentine	3 1/2 x 3	800	...
2 1/2	Valveless	3 x 3	720	65
2 1/2	Weco	2 1/2 x 3 1/2	...	45
3	Cady of Canastota	3 3/4 x 3 1/2	700	90
3	Clipper	4 1/4 x 4	800	240
3	Detroit	3 3/4 x 3 1/2	800	125
3	Guarantee	3 1/2 x 3 1/2	...	135
3	Honest Injun	3 x 3	800	60
3	Ithaca	4 1/4 x 3 1/2	600	175
3	Kahlenberg	3 1/2 x 3 1/2	750	125
3	Knox	4 x 4	600	205
3	Long	3 x 3 1/2	750	70
3	McKeough & Trotter	3 1/2 x 3 1/2	600	125
3	Mianus	4 x 4	550	175
3	Pilot	3 1/2 x 4	700	237
3	Red Wing	3 1/2 x 3 1/2	600	125
3	Sagamore	4 x 4	600	140
3	Stork	3 1/2 x 3 1/2	700	120
3	T. & M.	3 1/2 x 3 1/2	600	150
3	Toledo	3 1/2 x 3 1/2	750	135
3	Toppan	3 1/2 x 3 1/2	600	100
3	Wonder	3 1/2 x 3	750	75
3 1/2	Wood & Chute	4 x 4	600	220
3 1/2	DeMooy	4 1/4 x 5	800	210
3 1/2	Eagle	3 1/4 x 4	650	212
3 1/2	Eclipse Special	4 3/16 x 4	...	166
3 1/2	Evinrude	3 1/2 x 3	800	95
3 1/2	Fairbanks-Morse	3 1/2 x 3 1/2	800	149
3 1/2	Fox	3 1/4 x 3 1/2	800	100
3 1/2	Mietz & Weiss	4 x 4 1/2	700	380
3 1/2	Nancy Lee	3 1/2 x 4	700	130
3 1/2	Valveless	3 1/2 x 3 1/2	720	96
3 1/2	Weco	3 1/2 x 3 1/2	775	86
3 1/2	Wisconsin Valveless	3 1/4 x 3 1/2	700	100
4	Barber	4 x 4	600	150
4	Barker	4 9/16 x 5	550	220
4	Brown-Collins	4 x 4	800	93
4	Brown-Talbot	4 x 4	600	260
4	Cady of Canastota	4 1/4 x 4	700	135
4	Caille-Perfection	4 x 3 1/2	800	150
4	Ferro	3 1/2 x 3 1/2	800	152
4	Fraser	3 1/4 x 4	800	175
4	Fulton	3 1/4 x 4	650	170
4	Hallin	3 1/2 x 4 1/2	550	200
4	Kahlenberg	4 x 4	650	160
4	L-A	4 x 4	750	130
4	McKeough & Trotter	4 x 4	550	175
4	Northwestern	4 x 4 1/2	700	215
4	Red Wing	4 x 4	800	160
4	S. & H. Motor	4 x 3 1/2	600	150
4	Sandow	3 1/2 x 3 1/2	700	125
4	Stork	4 x 4	700	180
4	Van Epps	3 1/2 x 3 1/2	750	60
4 1/2	Waterman	4 x 4	600	112
4 1/2	Wood & Chute	4 1/2 x 5	550	308
4 1/2	Canadian Beaver	4 x 4	650	125
4 1/2	Eclipse Special	4 9/16 x 4 1/2	...	215
4 1/2	Gray	4 x 4	800	190
4 1/2	Knox	4 1/2 x 4 1/2	550	250
4 1/2	Kuhner	4 x 5	700	190
5	Belle Isle	4 1/4 x 3 1/2	800	125

RATED H.P.	MAKE	BORE AND STROKE	R.P.M.	WT.
5	Elbridge	3 3/4 x 3 1/2	800	53
5	Erd	4 x 4	800	145
5	Fay & Bowen	4 1/2 x 4 1/2	550	300
5	Fulton	3 3/4 x 4	800	120
5	Guarantee	4 1/2 x 4 1/2	...	200
5	Hartford	4 x 4 1/2	700	220
5	Honest Injun	4 x 4	800	95
5	K. & D.	4 1/2 x 4	600	225
5	Kowalsky	4 1/2 x 4	700	100
5	Nichols Oil	4 1/2 x 5	650	210
5	Red Wing	4 x 4 1/2	600	170
5	S. & H. Motor	4 1/4 x 4 1/2	600	250
5 1/2	T. & M.	4 1/2 x 4 1/2	550	260
5 1/2	Toppan	4 1/2 x 4 1/2	600	195
5 1/2	Tuttle	4 1/2 x 4	700	155
5 1/2	Valveless	4 x 4	600	190
5 1/2	Vanguard	4 x 4	700	238
5 1/2	Vim	4 x 4	800	140
5 1/2	Wisconsin Valveless	4 x 4	700	160
5 1/2	Wonder	4 x 4 1/2	750	100
5 1/2	Ferro	4 1/4 x 4 1/2	800	210
5 1/2	Knox	5 x 5 1/2	550	330
5 1/2	Nancy Lee	4 1/2 x 4 1/2	950	145
5 1/2	Barber	4 1/2 x 4 1/2	600	245
6	Bridgeport	4 1/2 x 5	700	180
6	Caille-Perfection	4 1/2 x 4 1/2	800	200
6	Canadian Beaver	4 1/2 x 4 1/2	650	175
6	Eagle	4 1/2 x 5	600	240
6	Fairbanks-Morse	4 1/2 x 4 1/2	800	235
6	Fraser	4 1/2 x 5	575	240
6	Fulton	4 1/2 x 5	600	285
6	Gray	4 1/2 x 4	800	225
6	Mianus	4 1/2 x 5	700	270
6	Pierce-Budd	4 x 4	750	116
6	Pilot	4 1/2 x 5	550	360
6	Red Wing	4 1/2 x 4 1/2	800	210
6	Rex	4 1/2 x 5	580	240
6	Sandow	4 1/2 x 4 1/2	700	180
6	Stork	4 1/2 x 4 1/2	700	225
6	Toledo	4 1/2 x 4 1/2	750	200
6	Van Epps	4 1/2 x 4 1/2	600	125
6	Weco	4 x 4	650	140
6	Wonder	4 1/2 x 4 1/2	750	200
7	Fox	4 1/2 x 4	750	150
7	Gladish	4 1/2 x 5	700	300
7	Grassier	4 1/2 x 4 1/2	800	350
7	Honest Injun	4 1/2 x 4 1/2	800	220
7	Kuhner	5 x 5	700	175
7	Mietz & Weiss	5 x 5 1/2	600	325
7 1/2	Mohawk	4 1/2 x 4 1/2	700	875
7 1/2	Monitor	4 1/2 x 4 1/2	800	225
7 1/2	Northwestern	5 x 5	650	260
7 1/2	Wisconsin Valveless	5 x 6	600	270
7 1/2	Fairbanks-Morse	4 1/2 x 4 1/2	700	190
7 1/2	Ferro	5 1/2 x 6	550	400
7 1/2	Knox	5 x 5 1/2	800	447
7 1/2	Nichols Oil	5 1/2 x 6 1/2	550	500
8	Caille-Perfection	5 1/2 x 6	550	385
8	Eddystone-Globe	5 1/2 x 5	600	300
8	Fulton	4 1/2 x 5	850	400
8	Gray	4 1/2 x 5	800	220
8	Little Giant	5 x 4	800	190
8	Rex	4 1/2 x 5	800	260
8	Stork	5 x 5	700	370
8	Barber	5 1/2 x 5 1/2	500	270
8	Fraser	5 1/2 x 6 1/2	575	350
8	Mohawk	4 1/2 x 4 1/2	700	275
8	Vim	5 x 5	700	235
8	DeMooy	5 1/2 x 6	650	320
8	Elbridge	4 1/2 x 4 1/2	800	90
8	Fairbanks-Victor	7 x 7 1/2	550	600
8	Grassier	5 x 5	800	320
8	Smalley	5 1/2 x 5 1/2	750	298
8	Wonder	5 1/2 x 5 1/2	750	275
11	Hartford	5 x 5 1/2	700	290</

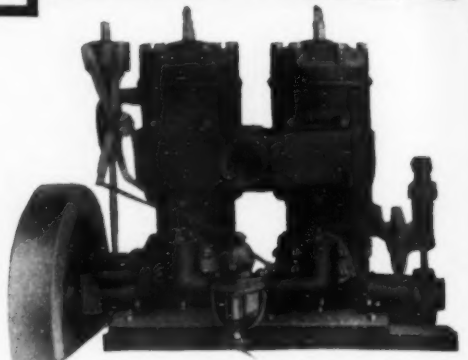
Two-Cycle Motors.



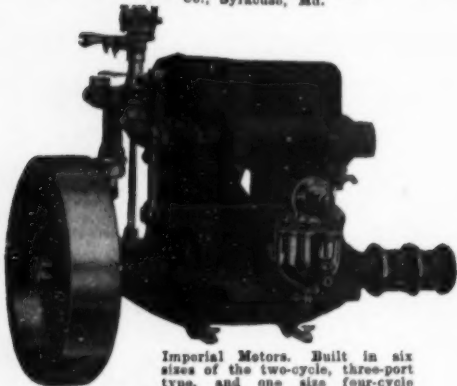
Two-cylinder Harkless motor made by the Lakeside Mfg. Co., Syracuse, Md.



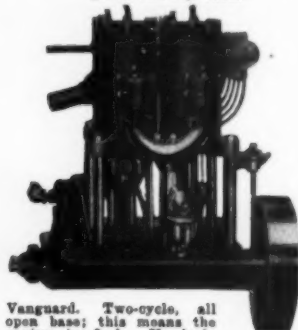
Model 2-K 7 h.p. High Speed Eagle. Both cylinders, intake and exhaust manifolds and upper half of crank case in one casting. New Model 2-O same construction, excepting corrugated rim fly-wheel.



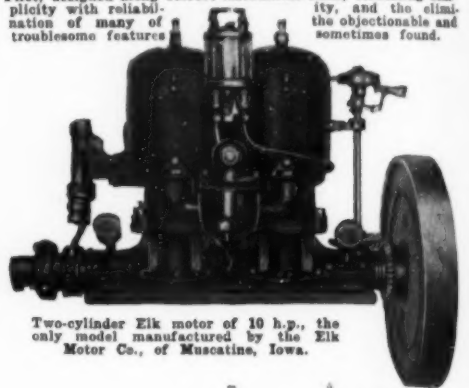
Pilot, designed along correct mechanical lines, combining simplicity with reliability, and the elimination of many of the objectionable and troublesome features sometimes found.



Imperial Motors. Built in six sizes of the two-cycle, three-port type, and one size four-cycle type. All jump spark ignition and all parts interchangeable. Die cast babbit bearings used throughout.



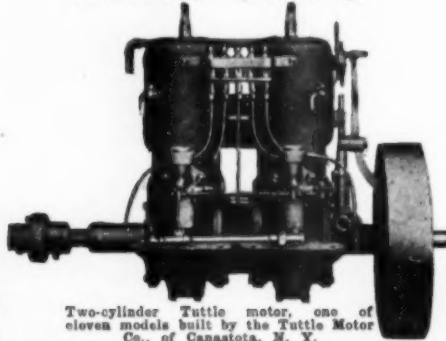
Vanguard. Two-cycle, all open base; this means the saving in fuel. No leakages, no wearing of cylinders oblong.



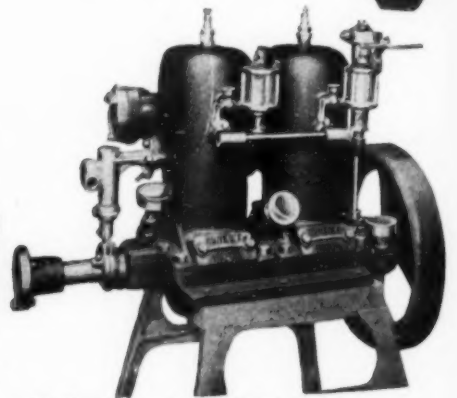
Two-cylinder Elk motor of 10 h.p., the only model manufactured by the Elk Motor Co., of Muscatine, Iowa.



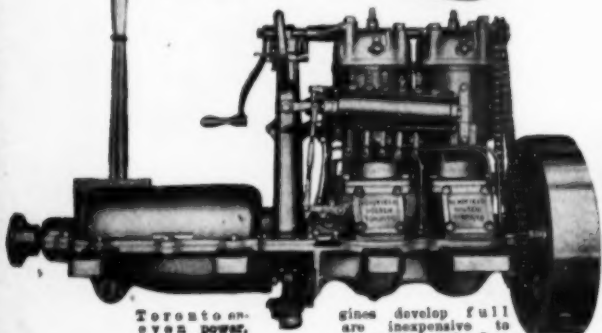
Two-cylinder Uncle Sam motor, built with either make and brake or jump spark ignition and guaranteed for one year.



Two-cylinder Tuttle motor, one of eleven models built by the Tuttle Motor Co., of Canastota, N. Y.



The Honest Injun is most original in its design. All the main bearings are bronze adjustable, crank case split above the shaft line. An original combination of two and three-port is used exclusively. Perfect water circulation and water-cooled exhaust.



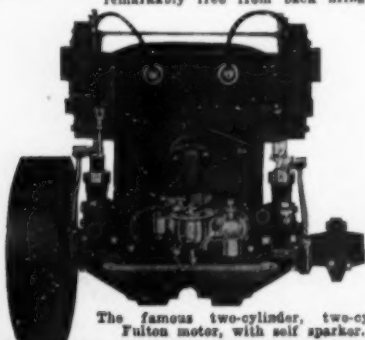
Toronto engines develop full power, are inexpensive to operate, have the flexibility without the weight of four-cycle machines, and are remarkably free from back firing.



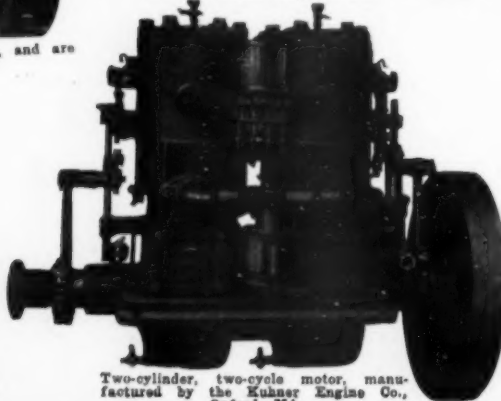
Two-cylinder Fairbanks-Victor motor of the two-cycle two-port type, designed for the medium-weight boat.



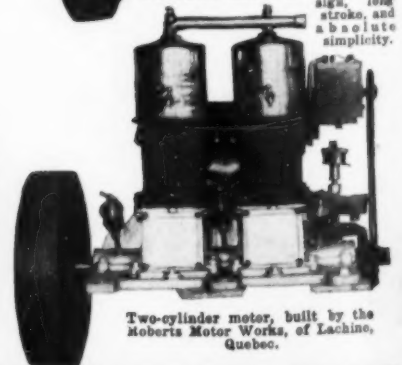
Some prominent features of the Watertown motors are on bloc design, long stroke, and absolute simplicity.



The famous two-cylinder, two-cycle Fulton motor, with self sparkar.



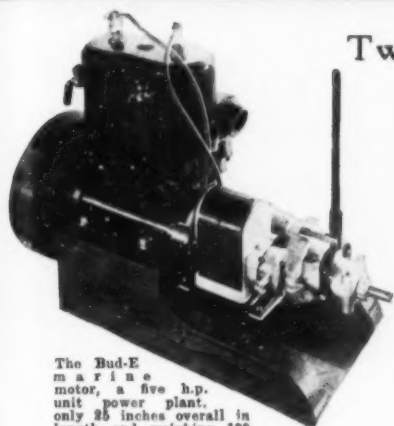
Two-cylinder, two-cycle motor, manufactured by the Kukner Engine Co., Oxford, Md.



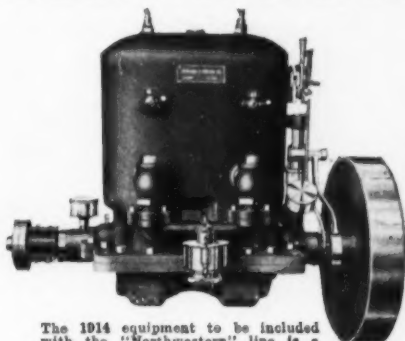
Two-cylinder motor, built by the Roberts Motor Works, of Lachine, Quebec.

Two-Cycle Motors.

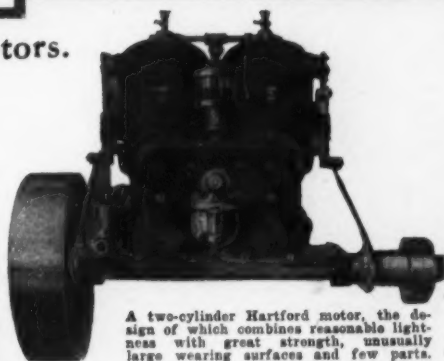
Two-Cylinder, Two-Cycle Motors.



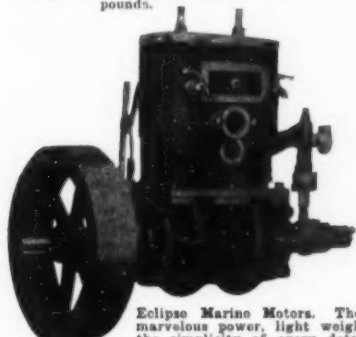
The Bud-E marine motor, a five h.p. unit power plant, only 45 inches overall in length and weighing 100 pounds.



The 1914 equipment to be included with the "Northwestern" line is a complete lighting and ignition outfit, including charging generator, storage battery, head light, search light, horn, complete switchboard, etc.



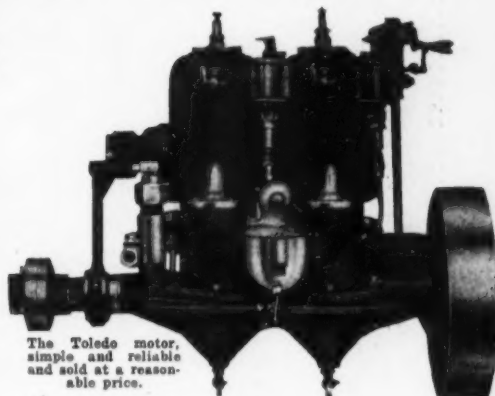
A two-cylinder Hartford motor, the design of which combines reasonable lightness with great strength, unusually large wearing surfaces and few parts.



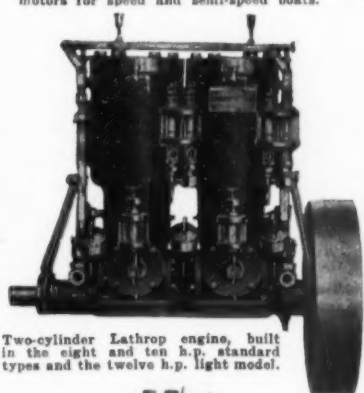
Eclipse Marine Motors. Their marvelous power, light weight, the simplicity of every detail, the beauty of design, together with high-class material and workmanship, make them ideal motors for speed and semi-speed boats.



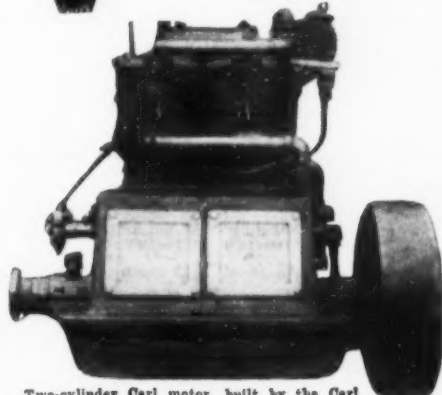
Wonder engines for 1914 equipped at a slight additional charge to operate on kerosene in all the different sizes and types.



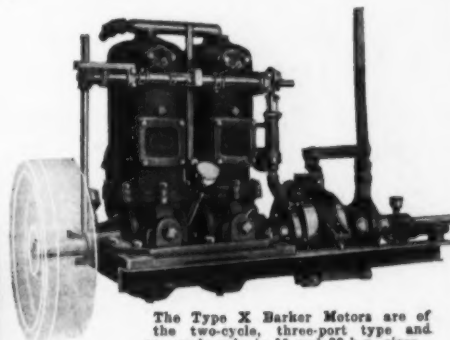
The Toledo motor, simple and reliable and sold at a reasonable price.



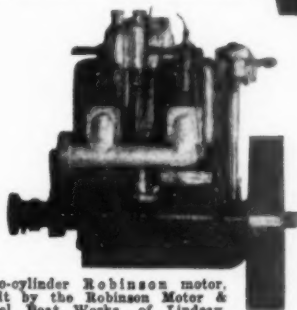
Two-cylinder Lathrop engine, built in the eight and ten h.p. standard types and the twelve h.p. light model.



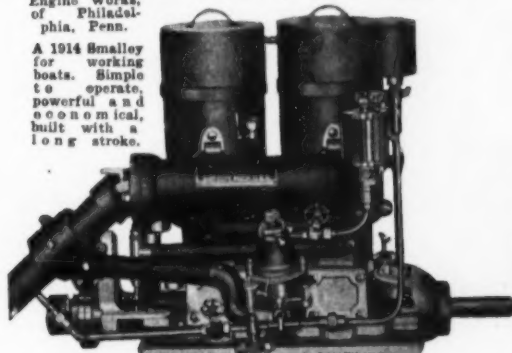
Two-cylinder Carl motor, built by the Carl Engine Works, of Philadelphia, Penn.



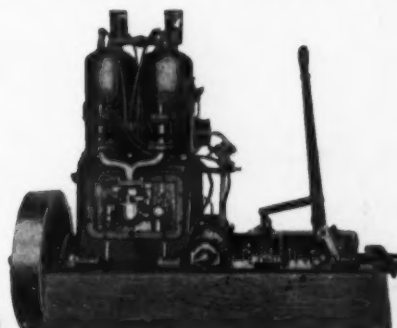
The Type X Barker Motors are of the two-cycle, three-port type and are made only in 15 and 20 h.p. sizes.



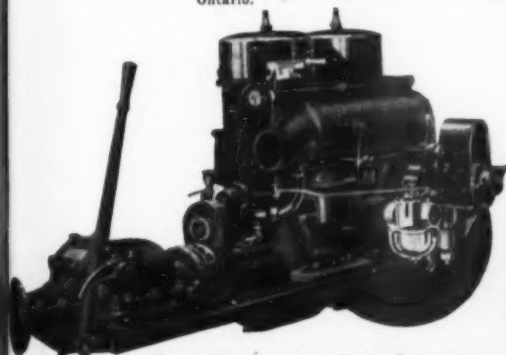
Two-cylinder Robinson motor, built by the Robinson Motor & Steel Boat Works, of Lindsay, Ontario.



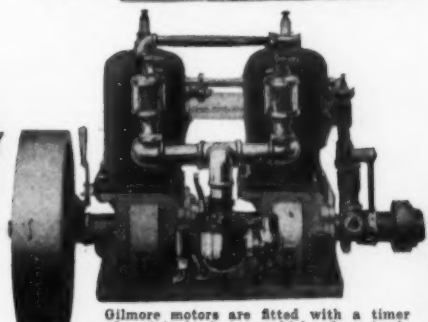
A 1914 Smalley for working boats. Simple to operate, powerful and economical, built with a long stroke.



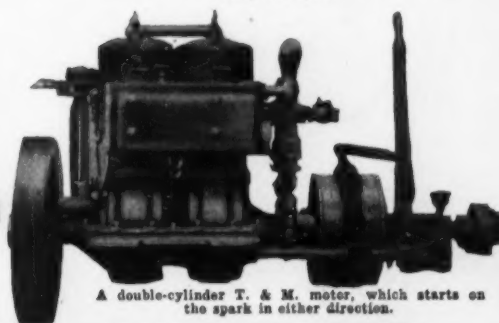
Oxford type C, 12-15 h.p., with a bore of 4 1/2 inches, and a stroke of 4 1/2 inches, open base, two-cycle.



Twenty-four h.p., two-cylinder Gray motor, bore 5 1/4 inches, stroke 5 inches.



Gilmore motors are fitted with a timer of original design which, by simple movement of the commutator, will reverse the motor.



A double-cylinder T. & M. motor, which starts on the spark in either direction.

Two-Cycle Motors.

RATED H. P.	MAKE	BORE AND STROKE	R.P.M.	WT.	RATED H. P.	MAKE	BORE AND STROKE	R.P.M.	WT.	RATED H. P.	MAKE	BORE AND STROKE	R.P.M.	WT.
12	Stork	4 1/2 x 4 1/2	700	330	6	Harkless	3 x 3 1/2	650	...	25	Willet	4 1/2 x 5	800	350
12	T. & M.	4 1/2 x 4 1/2	600	490	6	Kennebec	3 1/4 x 4	600	286	27	Barber	5 1/2 x 5 1/2	550	075
12	Toledo	4 1/2 x 4 1/2	750	300	9	Wonder	3 1/2 x 3	800	170	27	Fraser	5 1/2 x 6 1/2	575	900
12	Toppan	4 1/2 x 4 1/2	700	480	10	Ithaca	4 1/2 x 4 3/16	600	425	27	Vim	5 x 5	700	315
12	Weco	4 x 4	650	200	10	Kennebec	4 1/2 x 4 1/2	550	445	28	Honest Injun	5 x 5	750	400
12	Wonder	4 1/2 x 4 1/2	800	285	10	Long	3 x 3 1/2	750	170	30	DeMooy	5 1/2 x 6	650	840
14	Fox	4 1/2 x 4	750	240	10 1/2	Weco	3 1/2 x 3 1/2	750	199	30	Elbridge	4 1/2 x 4 1/2	800	235
14	Fox	4 1/2 x 5	700	440	11	Eagle	3 1/2 x 4	650	404	30	Wonder	5 1/2 x 5 1/2	750	600
14	Gladish	4 1/2 x 5	600	550	12	Aristox	3 3/16 x 4 1/2	600	700*	35	Smalley	5 1/2 x 5 1/2	750	858
14	Kahlenberg	5 x 6	550	850	12	Barber	4 x 4	600	390					
14	Monitor	5 x 5	650	475	12	Cady of Canastota	4 1/2 x 4	700	275					
14	Ontario	5 x 5	600	500	12	Ferro	3 1/2 x 3 1/2	800	276					
14	S. & H. Motor	5 x 5	550	440	12	Fraser	3 1/2 x 4	800	425					
14	Stanley	5 1/2 x 4 1/2	600	475	12	Kahlenberg	4 x 4	750	450					
15	Barker	5 1/2 x 5 1/2	600	540	12	S. & H. Motor	4 x 3 1/2	700	385					
15	Fairbanks-Morse	5 1/2 x 6	550	600	12	Valveless	4 x 4	700	400					
15	Ferro	5 x 5	800	367	12	Brown-Collins	3 x 3	720	225					
15	Honest Injun	5 x 5	700	275	15	Eclipse Special	4 9/16 x 4 1/2	...	375					
15	Kuhner	5 x 5	750	500	15	Elbridge	3 1/2 x 3 1/2	800	112					
15	Nichols Oil	5 1/2 x 6	550	525	15	Erd	4 x 4	800	335					
15	Oxford	4 1/2 x 4 1/2	750	500	15	Ithaca	5 1/2 x 5 1/2	600	650					
15	S. H. M.	4 1/2 x 4 1/2	750	480	15	K. & D.	4 1/2 x 4	600	480					
15	Sandow	4 1/2 x 5	750	300	15	Kennebec	5 x 6	615	615					
15	Toronto	4 1/2 x 5	750	415	15	Mohawk	4 1/2 x 4 1/2	700	545					
16	Canadian Beaver	5 x 5	600	400	15	S. & H. Motor	4 1/2 x 4 1/2	700	465					
16	DeMooy	4 1/2 x 5	800	360	15	Tuttle	4 1/2 x 4	700	325					
16	Eddystone-Globe	5 1/2 x 5	650	600	15	Vanguard	4 x 4	700	502					
16	Fulton	4 1/2 x 5	800	320	15	Vim	4 x 4	800	285					
16	Gray	4 1/2 x 5	800	600	15	Wonder	4 x 3 1/2	800	280					
16	Kahlenberg	5 1/2 x 6	525	930	16	Honest Injun	4 x 4	800	250					
16	Rex	4 1/2 x 5	800	420	16	Knox	5 x 5 1/2	525	750					
16	Stork	5 x 5	700	400	17	Fraser	4 1/2 x 4 1/2	800	371					
16	T. & M.	4 x 4	800	210	18	Barber	4 1/2 x 4 1/2	600	500					
18	Harber	5 1/2 x 6 1/2	550	500	18	Eagle	4 1/2 x 5	600	611					
18	Fraser	5 1/2 x 6 1/2	575	700	18	Fairbanks-Morse	4 1/2 x 5	800	435					
18	Northwestern	5 x 6	700	425	18	Fraser	4 1/2 x 5	575	625					
18	Vim	5 x 5	700	375	18	Rex	5 x 5	550	800					
20	Caillie-Perfection	5 1/2 x 6	650	575	18	Stork	4 1/2 x 5 1/2	700	450					
20	Columbia	5 1/2 x 6	600	575	18	Toledo	4 1/2 x 5 1/2	750	425					
20	DeMooy	5 1/2 x 6	650	580	20	Bridgeport	4 1/2 x 5	700	400					
20	Elbridge	4 1/2 x 4 1/2	800	162	20	S. & H. Motor	5 x 5	600	600					
20	Sandow	5 1/2 x 5	700	500	20	Gladish	5 x 5	600	750					
20	T. & M.	5 x 4 1/2	750	350	20	Kahlenberg	5 x 6	550	1000					
20	Van Epps	5 x 5	800	250	20	Monitor	5 x 5	650	625					
20	Wonder	5 1/2 x 5 1/2	750	400	21	Ontario	5 x 5	600	700					
22	Hartford	5 1/2 x 5 1/2	700	440	21	Oxford	4 1/2 x 5 1/2	750	650					
24	Fox	5 1/2 x 6	700	525	21 1/2	S. H. M.	4 1/2 x 5	750	510					
24	Gray	5 1/2 x 5	800	630	22 1/2	Toronto	4 1/2 x 5	750	490					
25	Smalley	5 1/2 x 5 1/2	750	468	24	DeMooy	4 1/2 x 5	800	510					
30	Pierce-Budd	6 1/2 x 7	550	590	24	Eddystone-Globe	5 1/2 x 5	650	800					

Three Cylinders.

RATED H. P.	MAKE	BORE AND STROKE	R.P.M.	WT.
3 1/2	Gilmore	3 x 3 1/2	800	97
4 1/2	Brown-Collins	3 x 3	800	125

Six Cylinders.

RATED H. P.	MAKE	BORE AND STROKE	R.P.M.	WT.
48	Eddystone-Globe	5 1/2 x 5	650	1600
60	Elbridge	4 1/2 x 4 1/2	800	454

2 Cycle. Light Weight & High Speed 2 Cycle.

R. P. M. More Than 800.

One Cylinder.

RATED H. P.	MAKE	BORE AND STROKE	R.P.M.	WT.
1	Brown	2 1/2 x 2 1/2	1000	45
2	Columbia	3 x 3 1/2	900	100
2	Evinrude	2 1/2 x 2 1/2	900	55
2	Fraser-Adams	3 1/16 x 3	900	85
2	Mietz & Weiss	3 x 3	1000	200 1/2
2	Morristown	3 x 3	900	65
2	Robinson	3 x 3	900	52
2	Tuttle	3 1/2 x 3	900	70
2	Waterman	2 1/2 x 3	900	36
2	Waterman	2 1/2 x 3	900	58
3	Brown	3 1/2 x 3 1/2	1000	100
3	Columbia	3 11/16 x 3 9/16	900	120
3	Ferro	3 1/2 x 3 1/2	900	115
3	Fraser	3 1/2 x 3	1000	75
3	Gray	3 1/2 x 3 1/2	1000	80
3	Imperial	3 1/2 x 3	900	98
3	Ontario	3 1/2 x 3 1/2	900	125
3	Roberts	3 1/2 x 3	900	98
3	St. Lawrence	3 1/2 x 3 1/2	900	100
3	Watkins	3 x 3	950	30
3 1/2	Eagle	3 1/2 x 3 1/2	1000	90
3 1/2	Erd	3 1/2 x 3 1/2	850	90
3 1/2	Mohawk	3 1/2 x 3 1/2	1000	135
3 1/2	Columbia	3 13/16 x 3 9/16	1000	135
4	Fraser-Adams	3 1/2 x 3 1/2	900	150
4	Robinson	3 1/2 x 3 1/2	900	93
4	St. Lawrence	3 1/2 x 4	900	110
4	Leary	3 1/2 x 4	1100	164
4	Little Giant	4 x 3 1/2	900	150
4	Brown	4 1/2 x 4 1/2	900	180
4	Columbia	4 13/16 x 4 1/2	950	180
4	Eagle	4 1/2 x 4	900	175
4	Mohawk	4 1/2 x 3 1/2	1000	155
4	Smalley	4 1/2 x 4 1/2	900	161
4	Waterman	4 x 4	900	86
4	Brown	5 1/2 x 4 1/2	900	200
4	Gray	4 1/2 x 4	900	205
4	Columbia	4 1/2 x 4 1/2	1000	200
4	Tygart	4 x 4	1000	200
4	Detroit	5 1/2 x 5	900	425
4	R. V.	5 x 5	1100	145
4	Elbridge	4 1/2 x 4 1/2	1050	65
4	Grassier	6 x 6	900	380

Two Cylinders.

RATED H. P.	MAKE	BORE AND STROKE	R.P.M.	WT.
2	Brown	2 1/2 x 2 1/2	1000	65
4	Fraser-Adams	3 1/16 x 3	900	140
4	Little Giant	3 x 3 1/2	900	90
4	Morristown	3 x 3	900	125
4	Tuttle	3 1/2 x 3	900	115
5	Bud-E	3 x 3	1200	90

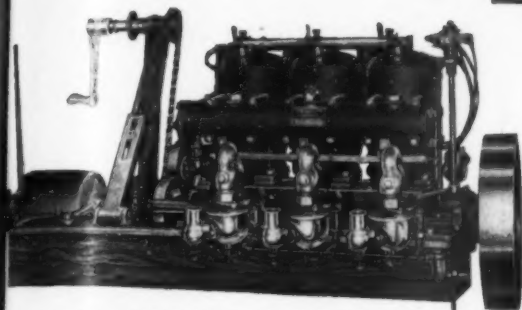
RATED H. P.	MAKE	BORE AND STROKE	R.P.M.	WT.
5	Waterman	2 1/2 x 3	900	60
5	Armstrong	3 1/2 x 3 1/2	950	130
5	Brown	3 1/2 x 3 1/2	1000	145
5	Detroit	3 1/2 x 3 1/2	900	275
5	Ferro	3 1/2 x 3 1/2	900	148
5	Gray	3 1/2 x 3 1/2	1000	138
5	Honest Injun	3 x 3	900	190
5	Ontario	3 1/2 x 3 1/2	900	190
5	Roberts	3 1/2 x 3	900	135
5	St. Lawrence	3 1/2 x 3 1/2	900	160
5	Watkins	3 x 3	950	50
5	Eagle	3 1/2 x 3 1/2	1000	136
5	Erd	3 1/2 x 3 1/2	850	160
5	Caillie-Perfection	3 1/2 x 3 1/2	1000	185
5	Fraser-Adams	3 1/2 x 3 1/2	900	200
5	Fox	3 1/2 x 3 1/2	850	175
5	Robinson	3 1/2 x 3 1/2	900	152
5	St. Lawrence	3 1/2 x 4	900	190
5	Van Epps	3 1/2 x 3 1/2	850	140
5	Gray	4 x 4	900	299
5	Columbia	3 1/2 x 3 1/2	1000	250
5	Detroit	4 1/2 x 4 1/2	900	320
5	Leary	3 1/2 x 4	1100	257
5	Morristown	4 x 4	900	200
5	Roberts	4 x 3 1/2	900	260
5	Watertown Special	3 1/2 x 4 1/2	1000	200
5	Wisconsin Valveless	4 x 4	850	240
5	Columbia	4 1/2 x 4 1/2	1000	370
5	Eagle	4 1/2 x 4	900	275
5	Gray	4 1/2 x 4	900	345
5	Mohawk	4 1/2 x 3 1/2	1000	220
5	St. Lawrence	4 x 4 1/2	900	200
5	Van Epps	4 1/2 x 4 1/2	850	230
5	Waterman	4 x 4	900	146
5	Gray	4 1/2 x 4	950	373
5	Brown	4 1/2 x 4 1/2	900	300
5	Columbia	4 13/16 x 4 9/16	1200	385
5	Pierce-Budd	4 x 4	950	170
5	Smalley	4 1/2 x 4 1/2	900	311
5	Vim	4 x 4	1200	210
5	Wisconsin Valveless	4 1/2 x 4 1/2	850	300
5	Little Giant	5 x 4	850	390
5	Brown	5 1/2 x 5 1/2	900	335
5	Erd	4 1/2 x 4 1/2	1100	200
5	Columbia	4 13/16 x 4 9/16	2000	400
5	Detroit	5 1/2 x 5	900	700
5	Mohawk	4 1/2 x 4 1/2	1500	325
5	Red Wing	4 1/2 x 4 1/2	1400	300
5	Roberts	4 1/2 x 5	1000	300*
5	R. V.	5 x 5	1100	175
5	Vim	5 x 5	1200	375
5	Elbridge	4 1/2 x 4 1/2	1050	105
5	Tygart	8 x 4	1800	500
5	Tygart	12 x 10	1000	2500

Three Cylinders.

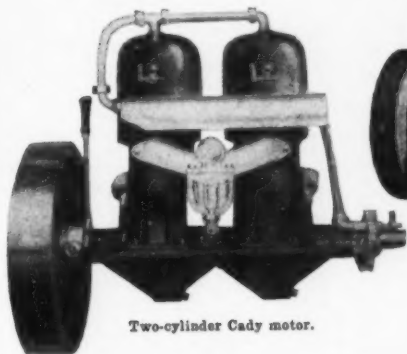
RATED H. P.	MAKE	BORE AND STROKE	R.P.M.	WT.
6	Fraser-Adams	3 1/16 x 3	900	185
6	Morristown	3 x 3	900	160
6	Tuttle	3 1/2 x 3	900	...
6	Armstrong	3 1/2 x 3 1/2	950	180

Two-Cycle Motors.

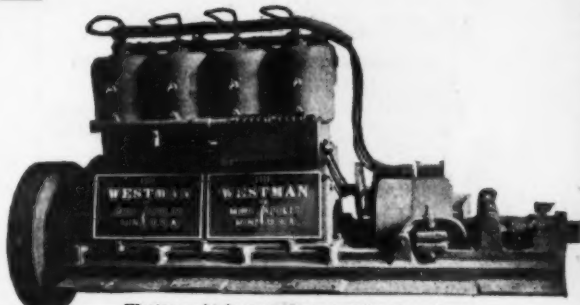
Multi-Cylinder Two-Cycle Motors.



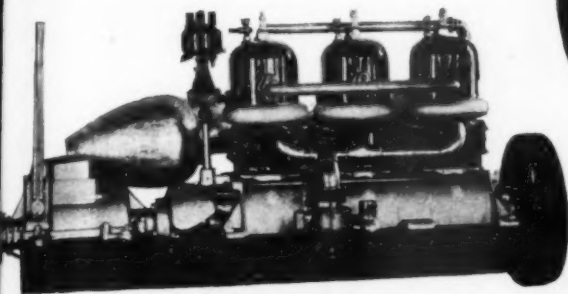
21-30 h.p. Mohawk motor, equipped with dual ignition and auxiliary air intake.



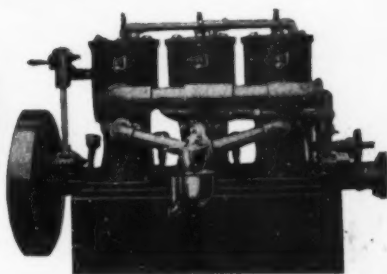
Two-cylinder Cady motor.



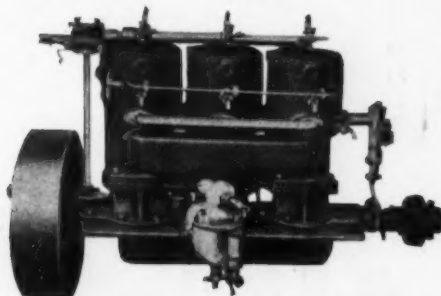
Westman, highest grade material and workmanship, simplicity, durability, economy, light but powerful build, easy starting and no worry qualities have kept the up-to-date Westman in the front rank for many years.



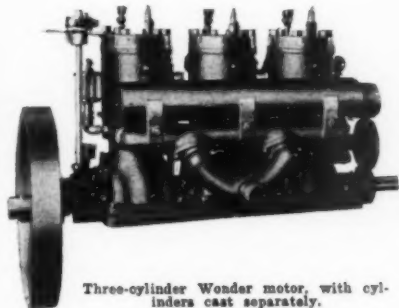
Leary motor, with two independent intakes to each cylinder, gasoline piped to the starting carburetor and kerosene to the other, regulated to use $\frac{1}{2}$ gasoline and $\frac{1}{2}$ kerosene, gives a cheap and powerful fuel.



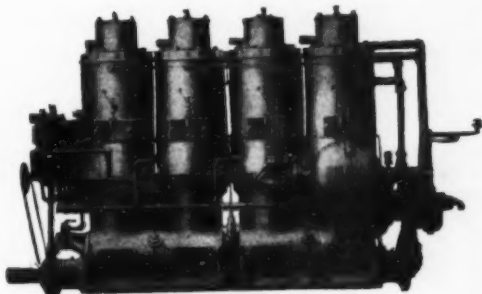
Ontario motor, which is remarkably free from vibration, owing to their design and construction. The center of gravity is extremely low, and the flanges by which the motor is secured to its foundation, are in line with the center of the shaft.



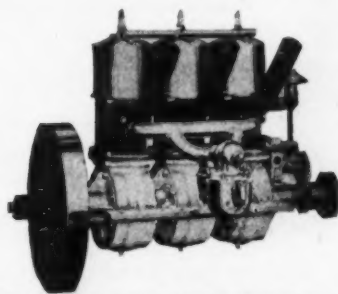
Palmer engines are built with as few parts as possible, are listed at moderate speeds, but may be run faster or slower, according to one's fancy.



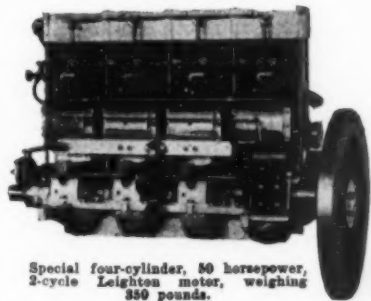
Three-cylinder Wonder motor, with cylinders cast separately.



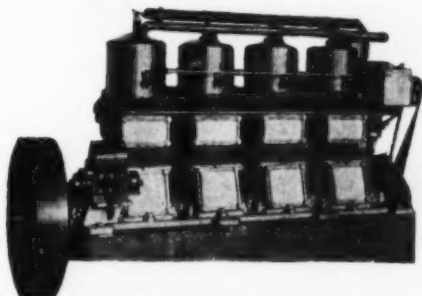
Side view of Miets & Weiss kerosene engine.



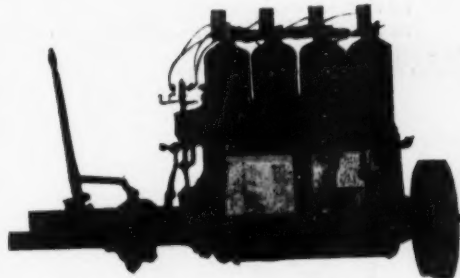
Elbridge engine, the finished product of an engineer who has spent the last ten years in progressive and practical motor work.



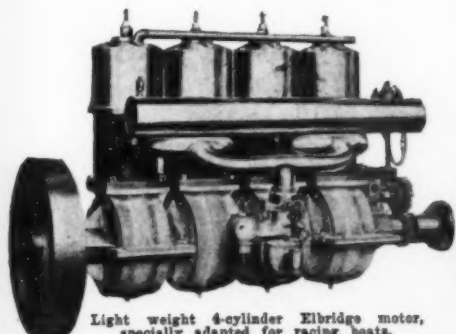
Special four-cylinder, 50 horsepower, 2-cycle Leighton motor, weighing 350 pounds.



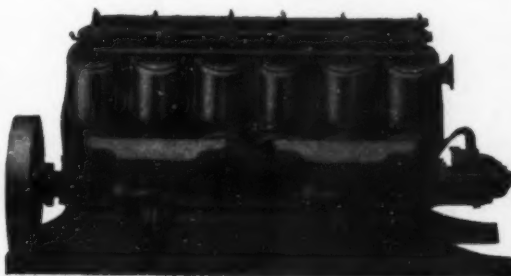
4-cylinder, 2-cycle, 60 h.p. Roberts, with cast iron cylinders, brass water jackets, aluminum crank case, and chrome nickel steel crank shaft. A very suitable motor for hydroplanes or fast runabouts.



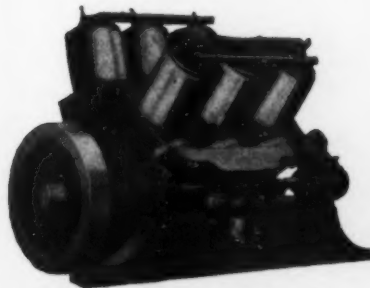
Four-cylinder, 25 horsepower Oxford motor of the 2-cycle type.



Light weight 4-cylinder Elbridge motor, specially adapted for racing boats.

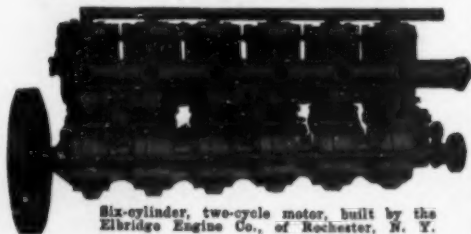


Twelve-cylinder light weight H-V two-cycle racing engine.



Six-cylinder V type H-V two-cycle motor.

Multi-Cylinder Motors.



Six-cylinder, two-cycle motor, built by the Elbridge Engine Co., of Rochester, N. Y.

RATED H. P.	MAKE	BORE AND STROKE	R.P.M.	WT.
20	St. Lawrence	4 x 4 1/2	900	450
20	Watertown Special	3 1/2 x 4 1/2	1000	320
24	Van Epps	4 1/2 x 4 1/2	1000	380
24	Waterman	4 x 4	1200	340
30	St. Lawrence	4 x 4	950	415
30	Wisconsin Valveless	4 x 4	1200	325
31	Vim	4 1/2 x 5	1000	450
32	Willet	4 1/2 x 5 1/2	900	600
35	Brown	4 1/2 x 4 1/2	1200	310
40	Erd	4 1/2 x 5	1000	498
40	Roberts	4 1/2 x 5	900	500
40	Robert's Motor	4 1/2 x 4 1/2	900	686

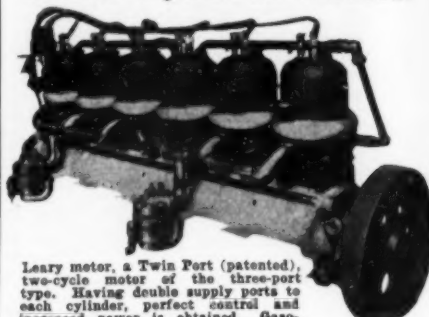
Two-Cycle Motors.

40	Van Epps	5 x 5	1000	350
40	Wisconsin	4 1/2 x 4 1/2	1000	500
40	Wisconsin Valveless	4 1/2 x 4 1/2	1000	500
45	Brown	5 1/2 x 4 1/2	900	650
50	Leighton	5 x 4 1/2	1200	350
50	Roberts	4 1/2 x 5	1250	200
55	R. V.	5 x 5	1100	295
55	Vim	5 x 5	1100	590
60	Elbridge	4 1/2 x 4 1/2	1050	200
60	Robert's Motor	5 1/2 x 6 1/2	875	600
150	Mercury	7 1/2 x 7	850	1200

Six Cylinders.

RATED H. P.	MAKE	BORE AND STROKE	R.P.M.	WT.
30	Leary	3 1/2 x 4	1100	550
45	Wisconsin Valveless	4 x 4	1100	550
50	Brown	4 1/2 x 4 1/2	900	800
60	Armstrong	5 x 5	950	700
60	Erd	4 1/2 x 4 1/2	1200	395
60	Pierce-Budd	4 x 4	1600	390
60	Roberts	4 1/2 x 5	1000	702
60	Wisconsin	4 1/2 x 4 1/2	1100	700
60	Wisconsin Valveless	4 1/2 x 4 1/2	1100	670
70	Brown	5 1/2 x 4 1/2	900	900
70	Smalley	4 1/2 x 4 1/2	900	985
75	Leighton	5 x 4 1/2	1400	550
75	Roberts	4 1/2 x 5	1250	300
80	R. V.	5 x 5	1100	405
90	Elbridge	4 1/2 x 4 1/2	1050	250
90	Mercury	5 x 5	850	625
120	Smalley	5 1/2 x 5 1/2	850	1770
125	Roberts	5 1/2 x 6	1150	585
125	Smalley	5 1/2 x 5 1/2	1100	1140
300	Pierce-Budd	6 1/2 x 7	1400	1350

Multi-Cylinder Motors.



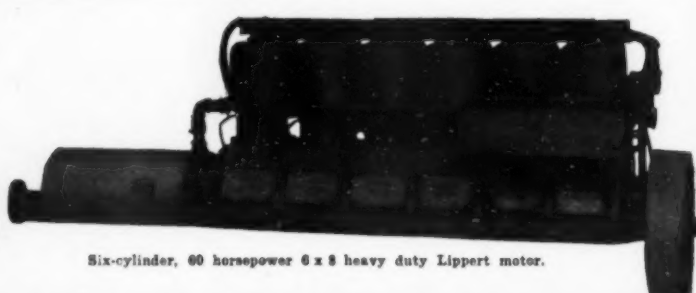
Leary motor, a Twin Port (patented) two-cycle motor of the three-port type. Having double supply ports to each cylinder, perfect control and increased power is obtained. Gasoline piped to starting carburetor and kerosene to other.

Twelve Cylinders.

RATED H. P.	MAKE	BORE AND STROKE	R.P.M.	WT.
160	R. V.	5 x 5	1100	810



High speed, light weight, 6-cylinder, 2-cycle Pierce-Budd motor.



Six-cylinder, 60 horsepower 6 x 8 heavy duty Lippert motor.

Four Cycle Motors

For the purpose of this engine directory, heavy duty motors were considered those whose rated horsepower is developed at 500 R. P. M. or less; medium duty motors, those having normal speeds between 501 and 800 R. P. M.; and light weight,

Heavy Duty

R. P. M. 500 and Less.

high speed motors, those having a greater rotative speed than 800 revolutions per minute. Where the manufacturer gave a range in horsepower and revolutions for a particular model, we have chosen the higher value in both cases.

One Cylinder.

RATED H. P.	MAKE	BORE AND STROKE	R.P.M.	WT.
2 1/2	Nieland	4 x 5	475	...
3	Automatic	4 1/4 x 5	500	300
3 1/2	Nieland	5 x 6	400	...
3 1/2	Palmer	4 1/2 x 4 1/2	350	350
3 1/2	Evanville	4 1/2 x 5	500	250
3 1/2	Grizzly Bear	4 1/2 x 5 1/2	450	400
4	Majestic	4 1/2 x 5	500	300
4	Samson	5 x 6	500	560
4	San Francisco	4 1/2 x 5 1/2	420	...
4	Standard	4 1/2 x 5	500	350
4 1/2	Vulcan	4 1/2 x 5	400	200
5	Carl Engine	5 1/2 x 6	325	600
5	Cambon	5 x 5 1/2	500	325
5	Evanville	5 x 6	500	350
5	Grizzly Bear	5 x 6	400	800
5	Heinel	5 x 5	500	...
5	Lisk	4 1/2 x 5	500	200
5	Nieland	6 x 7	350	...
5	Palmer	5 x 6	400	400
5	Regal	5 1/2 x 5 1/2	450	780
5	San Francisco	5 1/2 x 6 1/2	400	...
5	Standard	5 1/2 x 7	500	475
5	Vulcan	5 1/2 x 6	500	490
5	Wolverine	5 1/2 x 6	500	570
5	Yale	5 1/2 x 7	400	643
6	Automatic	5 1/2 x 6	450	220
6	Carl Engine	5 1/2 x 6	400	600
6	Clay	6 x 7	400	900
6	Corliss	6 x 7	400	850
6	Ellsworth	5 x 6	500	450
6	Fisherman	5 1/2 x 5	...	480
6	Guarantee Motor	5 1/2 x 5 1/2	500	...
6	Harris	5 1/2 x 6	500	390
6	Hettinger	6 1/2 x 3	325	...
6	Nieland	5 1/2 x 7	500	650
6	Samson	5 1/2 x 6 1/2	500	375
7	Campbell	6 x 6	430	365
7	Frisbie	5 1/2 x 6	500	480
7	Pearl	6 1/2 x 7	390	1040
7	Regal	6 1/2 x 7	380	...
7	San Francisco	6 1/2 x 7 1/2	475	800
7 1/2	Vulcan	6 1/2 x 7 1/2	475	800

RATED H. P.	MAKE	BORE AND STROKE	R.P.M.	WT.
8	Carl Engine	6 x 8	350	300
8	Clay	6 1/2 x 7	400	700
8	Evanville	6 x 6 1/2	500	575
8	Guarantee Motor	6 x 7	...	900
8	Harris	6 x 7	500	...
8	Hitchcock	6 x 7 1/2	475	600
8	Palmer	6 1/2 x 8	350	800
8	Samson	6 x 8	500	975
9	Strelinger	6 x 6	500	700
10	Clay	7 1/2 x 7 1/2	400	850
10	Nieland	7 1/2 x 9	300	...
11	Vulcan	7 1/2 x 8 1/2	425	1000

Two Cylinders.

RATED H. P.	MAKE	BORE AND STROKE	R.P.M.	WT.
5	Nieland	4 x 5	475	...
6	Automatic	4 1/2 x 5	500	525
7	Nieland	5 x 6	400	...
7 1/2	Evanville	4 1/2 x 5	500	350
8	Grizzly Bear	4 1/2 x 5 1/2	450	730
8	Ideal	5 x 6	500	600
8	Majestic	4 1/2 x 5	500	475
8	Samson	5 x 6	500	725
8	San Francisco	4 1/2 x 5 1/2	440	...
8	Standard	4 1/2 x 6	500	625
9	Carl Engine	4 1/2 x 5	500	260
10	Cambon	5 1/2 x 6	325	1100
10	Campbell	5 x 5 1/2	500	400
10	Evanville	5 x 6	500	475
10	Grizzly Bear	5 x 6	400	1400
10	Harris	5 x 7 1/2	500	...
10	Heinel	5 x 5	500	...
10	Lamb	4 1/2 x 6 1/2	450	860
10	Nieland	6 x 7	350	...
10	Regal	5 1/2 x 5 1/2	450	950
10	San Francisco	5 1/2 x 6	400	...
10	Standard	5 1/2 x 6	400	...
10	Sterling	4 1/2 x 6	500	700
10	Vulcan	5 1/2 x 7	500	825
10	Yale	5 1/2 x 6	500	885
11	Murray & Tregurtha	5 x 6	500	700
12	Anderson	5 x 6	500	850

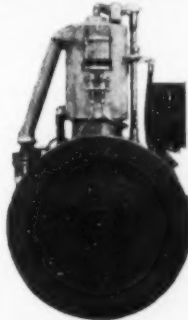
RATED H. P.	MAKE	BORE AND STROKE	R.P.M.	WT.
12	Automatic	5 1/2 x 7	400	1115
12	Buffalo	5 x 6 1/2	400	800
12	Clay	5 1/2 x 6 1/2	375	1050
12	Corliss	6 x 7	400	1400
12	Ellsworth	6 x 7	400	1250
12	Fisherman	5 x 6	500	850
12	Harris	5 1/2 x 6 1/2	500	...
12	Hettinger	5 1/2 x 6	500	615
12	Hines	5 1/2 x 6 1/2	500	800
12	Ideal	5 1/2 x 7	400	1000
12	Nieland	6 1/2 x 8	325	...
12	Samson	5 1/2 x 7	500	840
12	San Francisco	6 x 7	380	...
12	Standard	5 x 6 1/2	450	850
12	Vulcan	5 1/2 x 7	500	1012
12	Wolverine	6 1/2 x 7	400	1554
14	Campbell	5 1/2 x 6 1/2	500	600
14	Carl Engine	5 x 6	600	450
14	Clifton	6 1/2 x 7	400	1100
14	Frisbie	6 x 6	450	600
14	Murray & Tregurtha	5 1/2 x 7	425	1200
14	Pearl	5 1/2 x 6	500	750
14	Regal	6 1/2 x 7	400	1500
14	Truscott	6 x 7	350	1480
15	Buffalo	6 x 7 1/2	350	1100
15	Cambon	6 1/2 x 8	325	1450
15	Ralaco	5 x 7	500	1300
15	Sterling	5 1/2 x 7	500	975
15	Vulcan	6 1/2 x 7 1/2	475	1100
16	Corliss	6 1/2 x 7 1/2	350	2000
16	Doman	6 x 8	400	1485
16	Evanville	6 x 6 1/2	500	825
16	Guarantee Motor	6 x 7	...	...
16	Harris	6 x 7	500	...
16	Hitchcock	6 x 7 1/2	475	1100
16	Samson	6 x 8	500	1600
16	San Francisco	6 1/2 x 7 1/2	360	...
16	Standard	6 x 7	450	1250
16	20th Century	5 1/2 x 7 1/2	400	1150
18	Carl Engine	6 x 8	450	495
18	Clay	6 1/2 x 7 1/2	375	1200
18	Hettinger	6 1/2 x 8	400	1500
18	Murray & Tregurtha	6 1/2 x 8	425	1600
18	Standard	6 x 8	400	1250

Four-Cycle Motors.

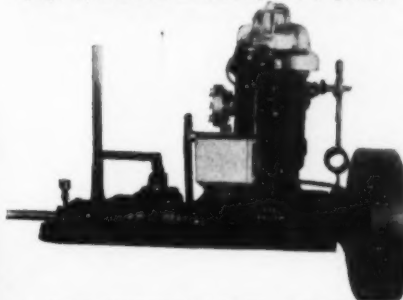
RATED H. P.	MAKE	BORE AND STROKE	R.P.M.	WT.
18	Strelinger	6 x 6	500	1200
20	Campbell	6 1/2 x 7 1/2	500	800
20	Corliass	7 1/2 x 9	300	3000
20	DeMooy	7 x 9	325	1530
20	Doman	7 x 9	350	1849*
20	Guarantee Motor	4 1/2 x 5 1/2	...	...
20	Hall	5 1/2 x 8 1/2	450	1400*
20	Jager	6 1/2 x 8	450	1300
20	Knox	7 x 8	450	1900*
20	Lawley	6 1/2 x 9	400	1250*
20	Nieland	7 1/2 x 9	300	...
20	Samson	7 x 9	450	2000*
20	San Francisco Standard	7 1/2 x 9	320	...
20	Sterling	6 1/2 x 8	400	1725*
20	20th Century	6 1/2 x 8 1/2	400	1600*
20	Yale	7 x 9	350	3600*
22	Clay	7 1/2 x 7 1/2	375	1375
22	Harris	6 1/2 x 8 1/2	450	...
22	Vulcan	7 1/2 x 8 1/2	445	1750
24	Hines	7 1/2 x 8 1/2	375	2500
24	T. & M.	7 x 8	430	1800
25	Anderson	7 x 8 1/2	450	1200*
25	Automatic	7 1/2 x 9	375	2625*
25	Cambo	7 1/2 x 9	300	2800
25	Clay	7 1/2 x 9	375	2250
25	Guarantee Motor	5 1/2 x 5 1/2	...	...
25	Heer	7 x 7	450	1850
25	Hitchcock	7 1/2 x 9	400	3100*
25	Palmer	7 1/2 x 10	300	3000
25	Ralaco	7 x 9	400	3300
25	Stork	7 1/2 x 9	400	2350*
27	Strelinger	6 x 6	500	1200
30	Clay	8 1/2 x 9	375	2400
30	Corliass	9 x 10 1/2	300	4200
30	Doak	8 x 10	350	4500*
30	Kemaco	8 x 10	300	5400*
30	San Francisco Standard	8 1/2 x 10 1/2	300	...
30	20th Century	8 x 10	400	1800*
32	Hall	7 1/2 x 10 of 11	400	2800*

RATED H. P.	MAKE	BORE AND STROKE	R.P.M.	WT.
32	Harris	8 x 10	400	...
32	Heer	7 1/2 x 8	450	1950
32	Scripps	7 1/2 x 9	450	2100*
40	Heer	9 x 10	350	3500
40	Hitchcock	9 x 12	330	4900*
40	Jager	8 1/2 x 12	400	3200
42	Clay	8 1/2 x 10 1/2	375	2500
50	Anderson	9 1/2 x 11	400	3250*
50	Corliass	10 1/2 x 12	280	6250
50	Heer	9 1/2 x 11	350	5000
56	Monarch	10 x 10	450	4300
65	Corliass	12 x 14	260	9600

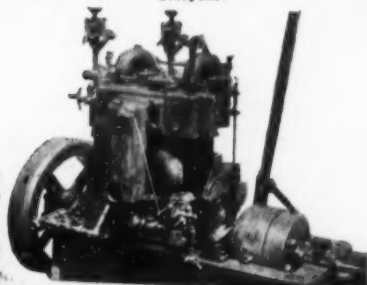
One and Two-Cylinder Four-Cycle Motors.



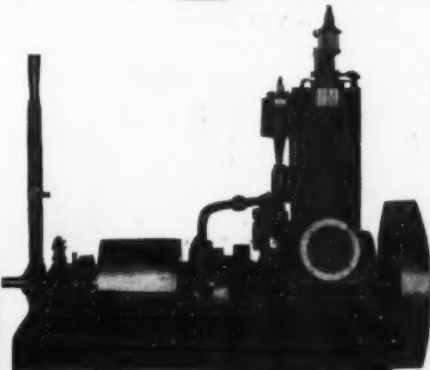
End view of Frisbie 3-5 and 5-7 h.p., a very popular commercial engine for fishermen and auxiliary purposes, noted for its economy and simplicity.



A 10 h.p. Remington Oil Engine, 1914 model. This engine is built with fewer parts than many other models, to bring the price within the reach of everyone.



Automatic, 2-cylinder, 5 1/2 x 7, 12 h.p., showing combination intake and exhaust manifold for using kerosene or gasoline. View shows method of operating gear driven magneto either high or low tension.

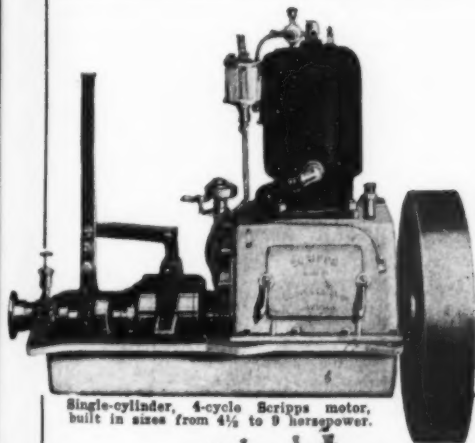


Strang, which will obviate such calamities as fires, explosions, etc., because the fuel on which it operates is not subject to such danger, starts instantly, runs silent without vibration. Electric Ignition.

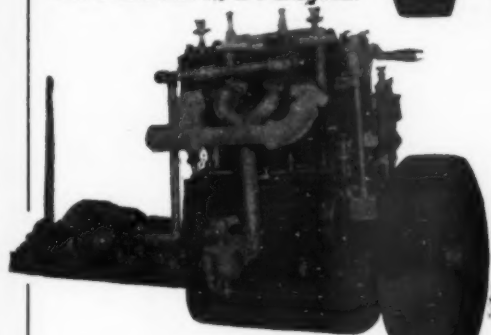
Three Cylinders.

RATED H. P.	MAKE	BORE AND STROKE	R.P.M.	WT.
9	Automatic	4 1/2 x 5	500	760*
12	Grizzly Bear	4 1/2 x 5	450	1000
15	Campbell	5 x 5 1/2	500	525
15	Evanville	5 x 6	500	650
15	Grizzly Bear	5 x 6	400	1900
15	Nieland	5 x 7	358	...
15	Yale	5 1/2 x 6	500	1190*
15	Anderson	5 x 6	500	1100*
18	Automatic	5 1/2 x 7	400	1425*
18	Corliass	6 x 7	400	1800
18	Craig	6 x 7	400	1600*
18	Doman	6 x 8	400	1780*
18	Ellsworth	6 x 7	400	1600
18	Nieland	6 1/2 x 8	325	...
18	Wolverine	6 1/2 x 7	400	2467*
21	Campbell	5 1/2 x 6 1/2	500	900
21	Clifton	6 1/2 x 7	400	1550*
23	20th Century	5 1/2 x 7 1/2	400	1500*
24	Evanville	6 x 6 1/2	500	1075
24	Hitchcock	6 x 7 1/2	475	1400*
24	Stork	6 x 7	450	1750*
25	Corliass	6 1/2 x 7 1/2	360	2000
25	Frisbie	6 x 6	450	850
25	Samson	6 x 8	500	2100*
25	San Fran. Standard	6 1/2 x 7	450	...
27	Standard	6 x 8	400	1800
27	Wolverine	7 1/2 x 9	350	3243*
28	Murray & Tregurtha	6 1/2 x 8	400	2200*
30	DeMooy	7 x 9	325	2115
30	Doak	6 1/2 x 8 1/2	400	4000*
30	Doman	7 x 9	350	2504*
30	Nieland	7 1/2 x 9	300	...
30	Samson	7 x 9	450	2600*
30	San Francisco Standard	6 1/2 x 8	360	...
30	Yale	7 x 9	350	5000*
35	Corliass	7 1/2 x 9	330	4000
35	Palmer	7 1/2 x 10	300	3500
35	Vulcan	7 1/2 x 8 1/2	425	2500

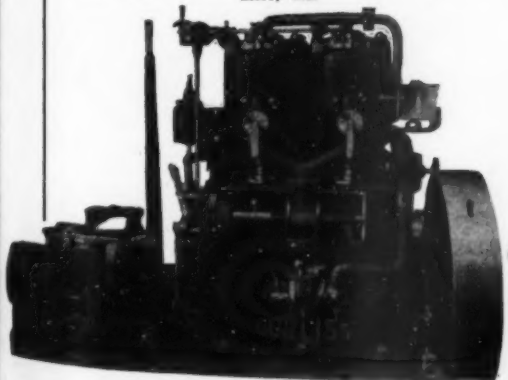
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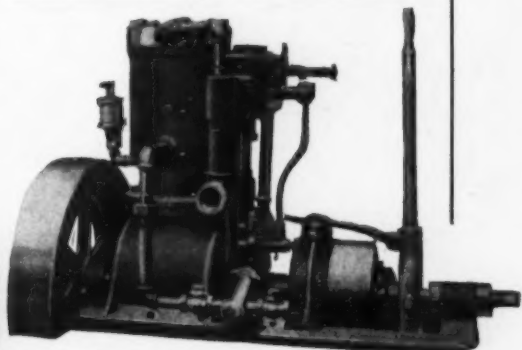
Single-cylinder, 4-cycle Scripps motor, built in sizes from 4 1/2 to 9 horsepower.



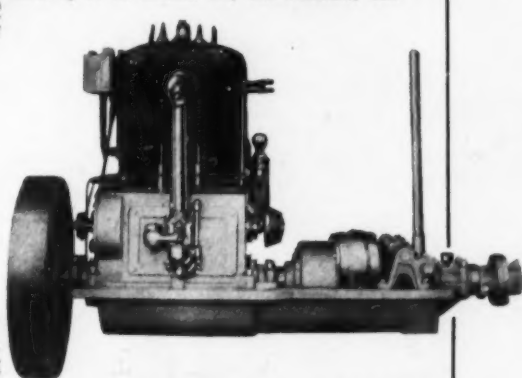
Two-cylinder Fadum motor, built in sizes from 8 to 15 h.p., by Frederick Fadum & Son, Baltimore, Md.



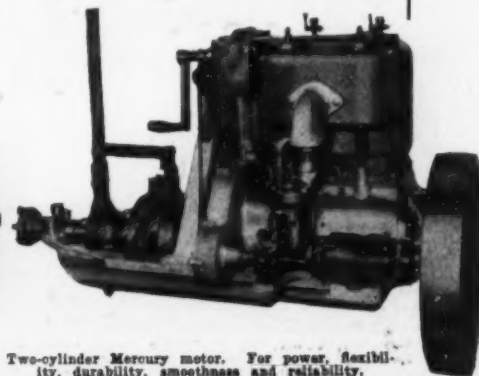
Two-cylinder Corliass motor, built in sizes from 10 to 65 h.p.



Single-cylinder, four-cycle Nieland motor, manufactured by J. E. Nieland Co., San Francisco, Cal.



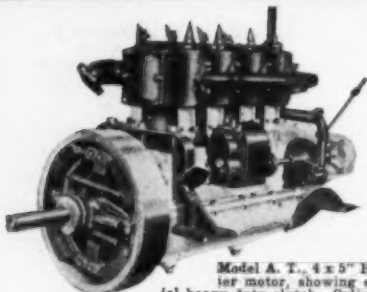
Sterling, a heavy duty, two-cylinder engine, developing 80 h.p. at 400 r.p.m., having a bore of 6 1/2 inches, and a stroke of 8 inches. Economical engine for hard, steady service, under the most adverse conditions.



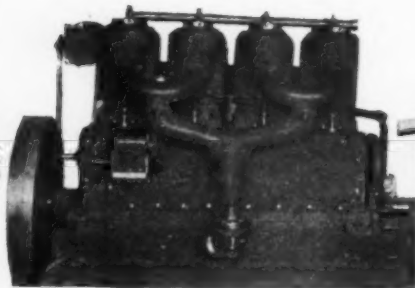
Two-cylinder Mercury motor. For power, flexibility, durability, smoothness and reliability.

Four-Cycle Motors.

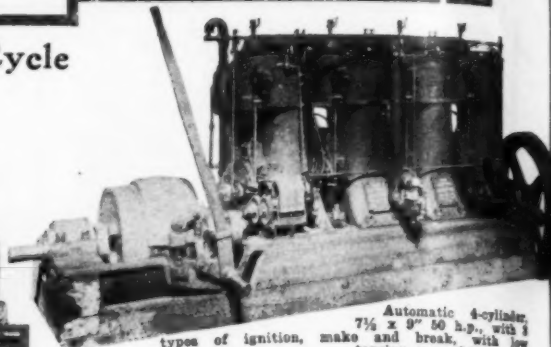
Four-Cylinder Four-Cycle Motors.



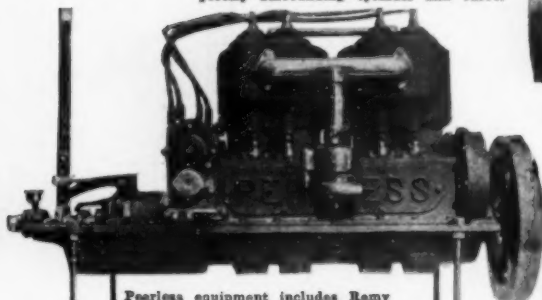
Model A. T. 4 x 5" Hoosier motor, showing special heavy duty clutch. Cylinders are cast single, with large water jacket completely surrounding cylinder and valve.



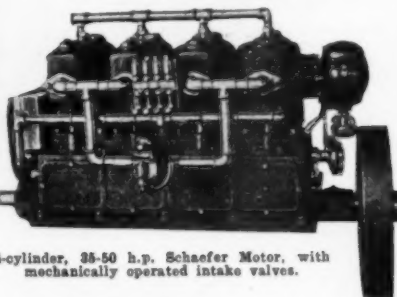
Four-cylinder, four-cycle motor, built by the Roberts Motor Works, of Lachine, Quebec.



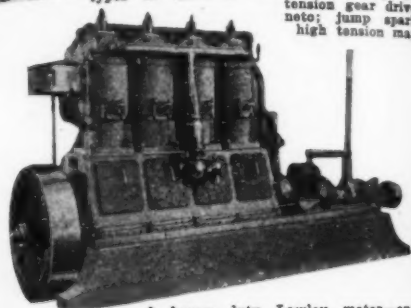
Automatic 4-cylinder, 7 1/2 x 9" 50 h.p., with 1 type of ignition, make and break, with low tension gear driven magneto; jump spark, with high tension magneto.



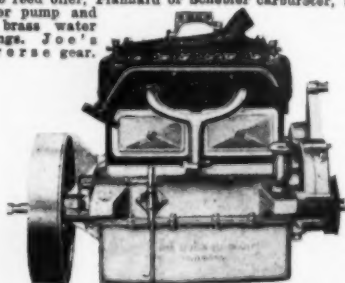
Peerless equipment includes Remy Dual Magneto, all wiring, Detroit force feed oiler, Planhard or Schebler carburetor, bronze water pump and all brass water fittings. Joe's reverse gear.



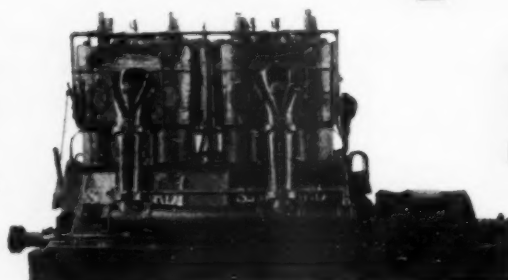
4-cylinder, 35-50 h.p. Schaefer Motor, with mechanically operated intake valves.



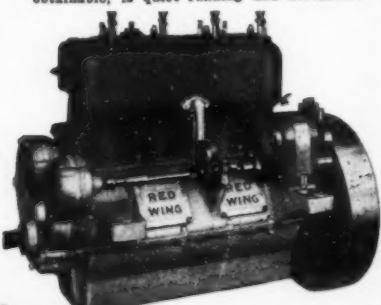
A heavy duty Lawley motor—one which is reliable, and built of the best materials obtainable, is quiet running and accessible.



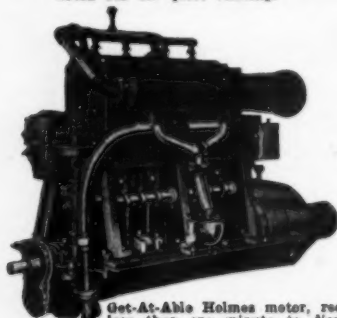
Four-cylinder, four-cycle light weight Buda motor, noted for its quiet running.



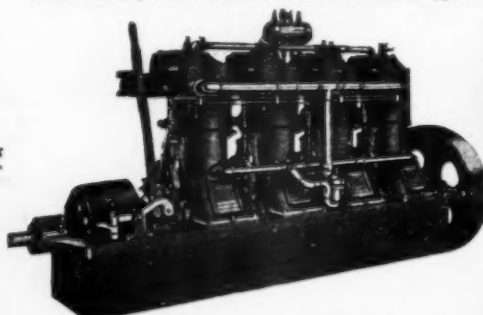
The Standard engine represents a distinctive type which has been developed through many years to most fully meet conditions in marine service. This type had, of necessity, to be radically different from the automobile type of engine, because of the radically different nature of the service each type is in.



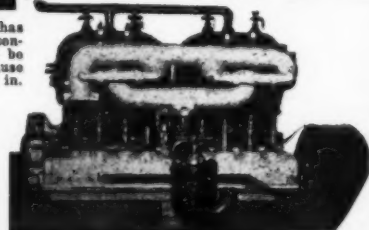
Red Wing Thorobred motor, which has cylinders cast on bloc, L head, bore 4 1/16", stroke 4 1/4". Aluminum crank case, push rods enclosed.



Get-At-Able Holmes motor, requiring less than one minute to disassemble.



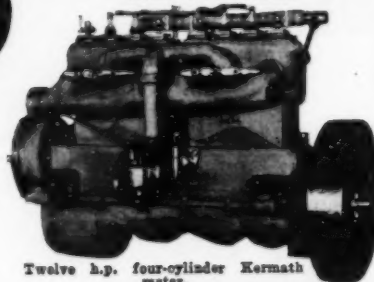
Hitchcock, equipped with patented Vapor Heater at no extra charge. This allows them to operate on either gasoline, distillate or kerosene, as desired.



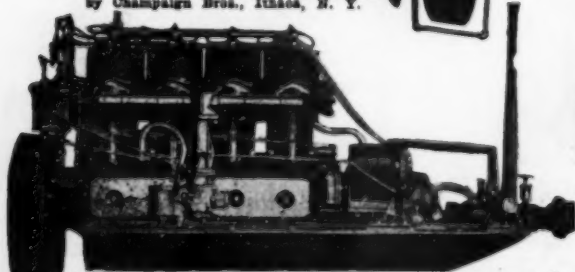
Four-cylinder, four-cycle Reliance-Continental motor, with L heads.



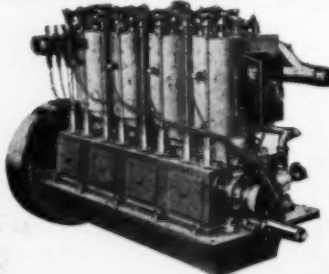
Four-cycle Ithaca motor, manufactured by Champaign Bros., Ithaca, N. Y.



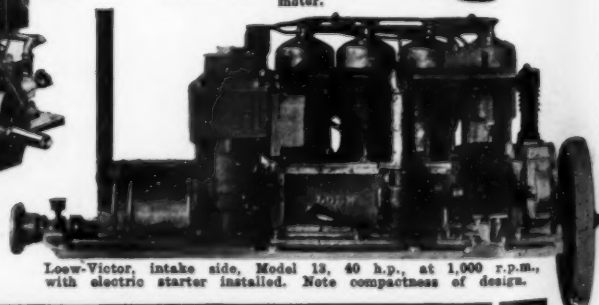
Twelve h.p. four-cylinder Kernath motor.



4-cylinder, 4-cycle, 3 1/4 x 6", Van Blerck motor, for power, for speed, for day in and day out consistent performance. The very highest qualities of power, speed and reliability.



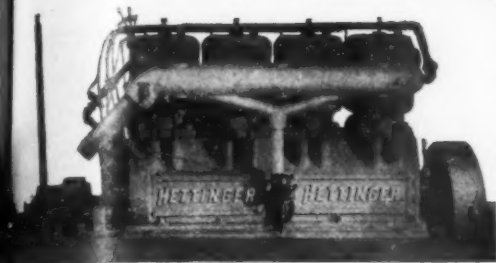
4-cylinder, 39 h.p., Evansville motor, with high tension magneto. A special feature of this motor is its simple, yet efficient oiling system.



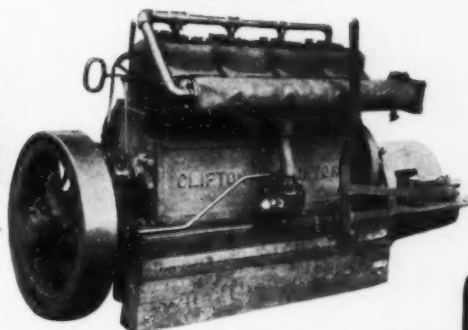
Loew-Victor, intake side, Model 13, 40 h.p., at 1,000 r.p.m., with electric starter installed. Note compactness of design.

Four-Cycle Motors.

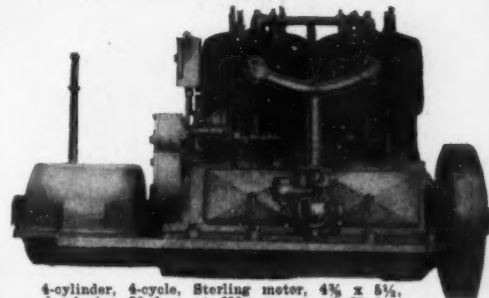
Multi-Cylinder Four-Cycle Motors.



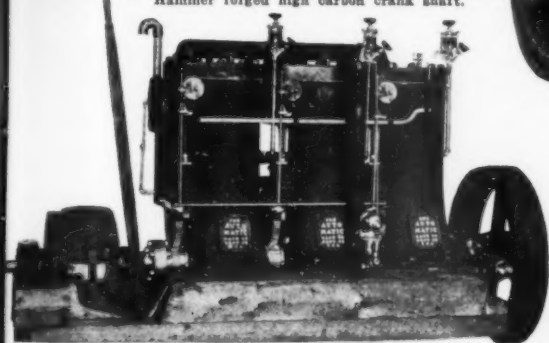
Hettinger, 30 h.p., 4-cylinder, 4-cycle, with cylinders 6 1/2" bore, 8" stroke, cast separately, without any packing joints leading into the water jacket. Hammer forged high carbon crank shaft.



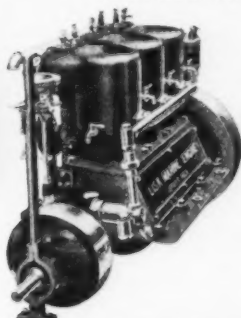
Four-cylinder Clifton motor, specially adapted for cruiser work.



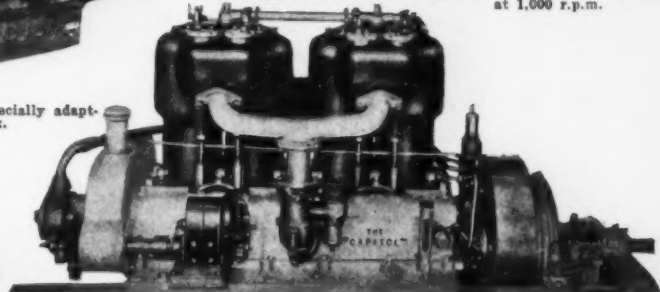
4-cylinder, 4-cycle, Sterling motor, 4 1/2" x 5 1/2", developing 20 h.p. at 600 r.p.m., and 35 h.p. at 1,000 r.p.m.



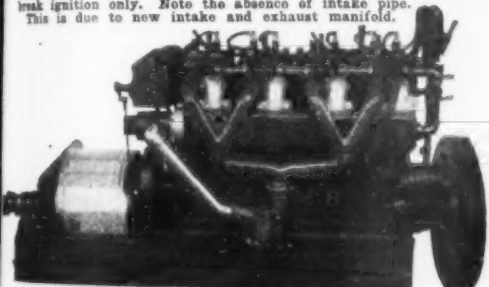
Automatic, 3-cylinder, 5 1/2" x 7, 18 h.p., with make and break ignition only. Note the absence of intake pipe. This is due to new intake and exhaust manifold.



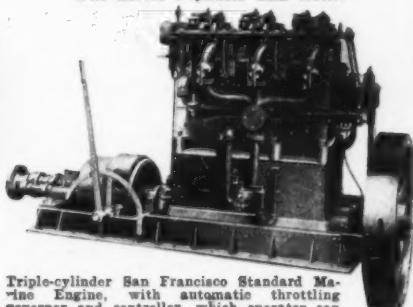
Well known 3-cylinder Lisk motor.



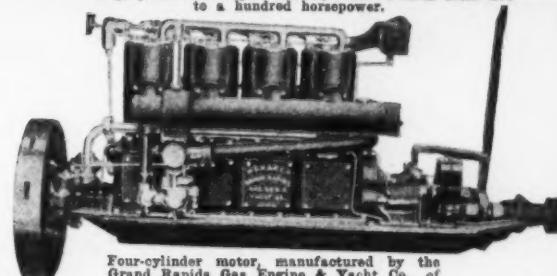
Highly efficient Capitol motor, built in sizes from 25 to a hundred horsepower.



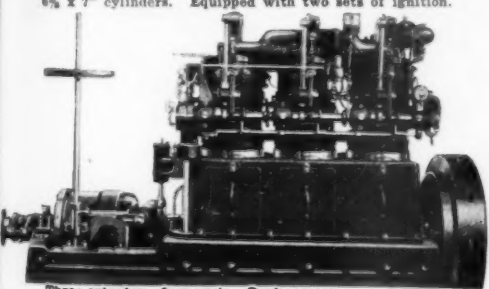
Lamb, Model R, 4-cylinder, 24 h.p., 5 1/4" x 6" cylinders, and Model H 4-cylinder, 40 h.p., Heavy Duty Motor, 6 1/2" x 7" cylinders. Equipped with two sets of ignition.



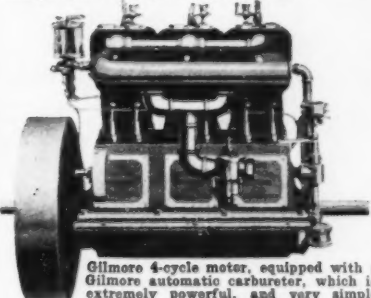
Triple-cylinder San Francisco Standard Marine Engine, with automatic throttling governor and controller, which operator can change speed of engine while running.



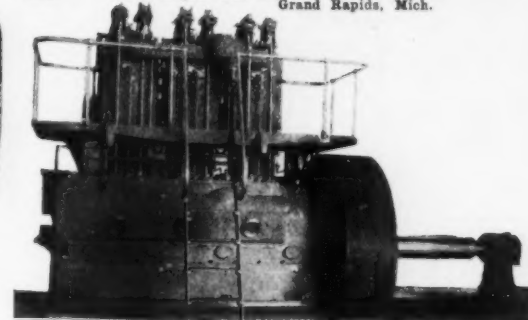
Four-cylinder motor, manufactured by the Grand Rapids Gas Engine & Yacht Co., of Grand Rapids, Mich.



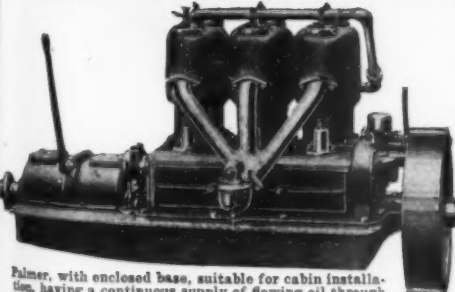
Three-cylinder, four-cycle, Deak motor.



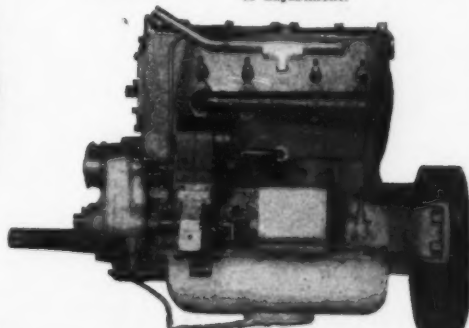
Gilmore 4-cycle motor, equipped with a Gilmore automatic carburetor, which is extremely powerful and very simple of adjustment.



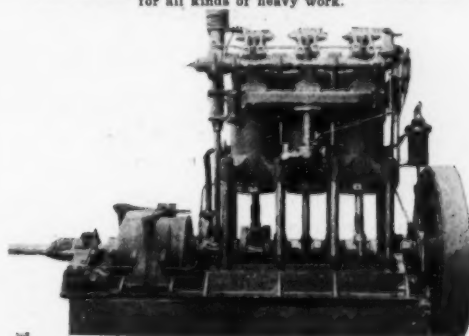
Rathbun motor, built in all sizes, and especially adapted for all kinds of heavy work.



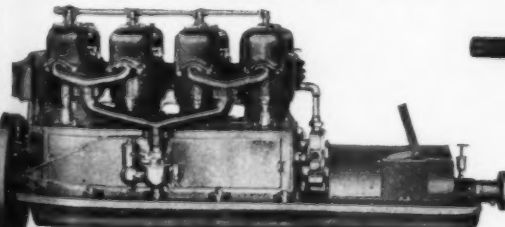
Palmer, with enclosed base, suitable for cabin installation, having a continuous supply of flowing oil through motor and clutch, run with minimum attention.



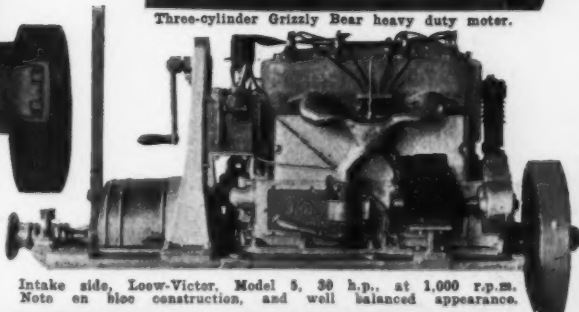
Four-cylinder light weight Model motor.



Three-cylinder Grizzly Bear heavy duty motor.



Four-cylinder Defoe motor.



Intake side, Loew-Victor, Model 5, 30 h.p., at 1,000 r.p.m. Note on blue construction, and well balanced appearance.

Four-Cycle Motors.

RATED H. P.	MAKE	BORE AND STROKE	R.P.M.	WT.
36	Hines	7 1/2 x 8 1/2	375	3400
36	T. & M.	7 x 8	440	2500
36	Wolverine	8 1/2 x 9	350	3925
37 1/2	Anderson	7 x 8 1/2	450	1700
37 1/2	Automatic	7 1/2 x 9	375	3465
38	Hitchcock	7 1/2 x 10	375	4300
38	Stork	7 1/2 x 9	400	3300
40	Doak	7 1/2 x 9	375	5500
40	Samson	8 x 9	400	4000
40	San Francisco	Standard	8 x 10	380
45	Craig	8 1/2 x 9	400	3400
50	Corliss	9 x 10 1/2	300	6000
50	Doak	8 x 10	375	6500
50	Samson	8 x 10	400	4800
50	San Francisco	Standard	8 1/2 x 10 1/2	300
50	Wolverine	9 1/2 x 12	300	6538
50	Vulcan	8 1/2 x 10 1/2	400	3800
60	Doak	9 x 10	330	8000
60	Hitchcock	9 x 12	330	6200
60	Clifton	8 1/2 x 11	400	4500
65	Wolverine	10 x 12	300	6750
75	Anderson	9 1/2 x 11	400	4300
75	Automatic	10 x 14	275	8000
75	Doak	9 1/2 x 11	300	10500
75	Hitchcock	10 x 14	275	14000
75	Samson	10 1/2 x 12	300	9550
75	Wolverine	11 x 12	300	7025
75	Yale	9 1/2 x 12	300	1200
80	Corliss	10 1/2 x 12	280	10600
80	San Francisco	Standard	9 1/2 x 12	280
84	Monarch	10 x 10	450	6100
90	Automatic	10 1/2 x 13	250	12000
90	Doak	9 1/2 x 12	325	11000
100	Corliss	12 x 14	260	15000
100	Samson	12 x 14	275	15000
100	Wolverine	12 1/2 x 14	280	10260
100	Yale	12 x 16	250	14000
110	San Francisco	Standard	11 1/2 x 15	250
110	Staten Island	12 x 18	200	15000
130	Corliss	13 1/2 x 15 1/2	240	22000
150	Corliss	14 1/2 x 17	220	28000
150	Samson	14 x 17	225	24000

Four Cylinders.

RATED H. P.	MAKE	BORE AND STROKE	R.P.M.	WT.
14	Palmer	4 1/2 x 4 1/2	350	850
15	Evansville	4 1/2 x 5	500	575
16	Ideal	5 x 6	400	1250
20	Campbell	5 x 5 1/2	500	880
20	Clifton	5 x 6	500	1050
20	Evansville	5 x 6	500	825
20	Grizzly Bear	5 x 6	400	2500
20	Palmer	5 x 6	400	1250
20	Vulcan	5 1/2 x 7	500	1150
20	Yale	5 1/2 x 6	500	1500
24	Anderson	5 x 6	500	1350
24	Buffalo	5 x 6 1/2	400	1450
24	Doman	6 x 8	400	2285
24	Hillworth	6 x 7	400	2000
24	Hines	5 1/2 x 5 1/2	500	1400
24	Regal	5 1/2 x 5 1/2	500	1425
24	Standard	5 x 6 1/2	450	1600
25	Craig	6 x 7	400	2100
25	Frishie	4 1/2 x 5	450	620
25	Ideal	5 1/2 x 7	400	1700
28	Campbell	5 1/2 x 6 1/2	500	1200
28	Clifton	6 1/2 x 7	400	1800
28	Regal	6 1/2 x 7	400	2500
28	Truscott	6 x 7	350	2850
30	Corliss	6 x 7	450	2100
30	Imperial	5 x 6	500	1027
30	Lamb	4 1/2 x 6 1/2	450	1250
30	Murray & Tregurtha	5 1/2 x 7	425	1900
30	Pearl	5 1/2 x 6	500	1150
30	Ralaco	5 x 7	500	2200
30	20th Century	3 1/2 x 7 1/2	400	1800
30	Vulcan	6 1/2 x 7 1/2	475	1850
32	Evansville	6 x 6 1/2	500	1225
32	Hitchcock	6 x 7 1/2	475	1700

RATED H. P.	MAKE	BORE AND STROKE	R.P.M.	WT.
32	Palmer	6 1/2 x 8	350	2400
32	Stork	6 x 7	450	2350
35	Harris	6 x 7	500	2000
35	Sterling	5 1/2 x 8	500	1600
35	Hettinger	6 1/2 x 8	400	3000
37	Standard	4 x 6	400	2800
40	Campbell	6 1/2 x 7 1/2	500	1700
40	Corliss	6 1/2 x 7 1/2	400	2900
40	DeMooy	7 x 9	325	2700
40	Doman	7 x 9	350	2867
40	Hall	5 1/2 x 8 1/2	450	2000
40	Ideal	7 x 8	400	2400
40	Jager	6 1/2 x 8	450	2100
40	Knox	7 x 8	450	3200
40	Lamb	6 1/2 x 7	450	2300
40	Lawley	6 1/2 x 8	400	2500
40	Murray & Tregurtha	6 x 8	500	1600
40	Robert's Motor	6 x 8	500	1900
40	Strelinger	6 x 8	500	1900
40	Yale	7 x 9	350	6500
45	Buffalo	7 x 9	350	2900
45	Regal	7 1/2 x 9	400	4600
45	Sterling	6 1/2 x 9	400	2575
45	Vulcan	7 1/2 x 8 1/2	425	3150
45	Anderson	7 1/2 x 9	375	4430
50	Automatic	7 1/2 x 9	300	4700
50	Camdon	7 1/2 x 9	350	5500
50	Corliss	6 1/2 x 8 1/2	500	2000
50	Harris	6 1/2 x 8 1/2	375	4000
50	Hines	7 1/2 x 10	375	5400
50	Hitchcock	7 1/2 x 10	300	4200
50	Palmer	7 1/2 x 9	360	3600
50	Ralaco	7 x 9	425	4800
50	Stork	7 1/2 x 9	400	4500
50	20th Century	6 1/2 x 8 1/2	400	2600
55	Loew Victor	7 1/2 x 8 1/2	400	2300
55	Robert's Motor	7 x 9	450	2600
56	Clay	7 1/2 x 9	375	4500
60	Craig	8 1/2 x 10	400	4000
60	Hettinger	8 1/2 x 10	350	4500
60	Kemaco	8 x 10	300	7200
60	Murray & Tregurtha	7 1/2 x 10	375	4000
64	Scripps	7 1/2 x 9	450	3700
65	Buffalo	8 1/2 x 9	375	3150
65	Hall	7 1/2 x 11	400	4600
65	Harris	8 x 10	375	4000
65	Corliss	9 x 10 1/2	325	8000
65	Harris	9 1/2 x 11	350	8000
65	Robert's Motor	8 x 10 1/2	400	3200
65	Standard	8 1/2 x 10 1/2	400	5300
65	Vulcan	9 x 12	300	7500
75	Hitchcock	8 1/2 x 12	400	5200
75	Jager	8 1/2 x 11	350	5000
75	Murray & Tregurtha	8 x 10	400	3700
75	20th Century	8 1/2 x 11	400	5200
75	Clifton	9 x 12	325	6000
75	Murray & Tregurtha	9 x 12	400	5350
75	Anderson	10 x 14	275	11780
75	Automatic	10 x 12	300	60700
75	Buffalo	9 x 10	400	4500
75	Craig	9 1/2 x 11	300	12000
75	Doak	10 x 14	275	17000
75	Hitchcock	10 1/2 x 12	300	14500
75	Corliss	10 x 10	450	7030
75	Monarch	10 1/2 x 15	250	17000
75	Automatic	10 1/2 x 15	250	17000
75	Doak	11 x 14	300	13000
75	Harris	11 x 14	300	13000
75	Yale	12 x 16	250	16000
75	Corliss	12 x 14	280	18000
75	Harris	11 x 15	300	13000
75	Staten Island	12 x 18	200	20000
75	Corliss	13 1/2 x 15 1/2	260	25000
75	Corliss	14 1/2 x 17	240	35000
75	Craig	11 x 12	400	2000
75	Doak	12 1/2 x 15	285	33000
75	Staten Island	14 x 21	200	26000

Five Cylinders.

RATED H. P.	MAKE	BORE AND STROKE	R.P.M.	WT.
95	Murray & Tregurtha	8 1/2 x 11	325	5200

Six Cylinders.

RATED H. P.	MAKE	BORE AND STROKE	R.P.M.	WT.
30	Buffalo	5 x 6 1/2	400	1900
30	Pearl	5 1/2 x 6	500	1400
30	Stork	6 x 7	450	3300
40	Campbell	5 1/2 x 6 1/2	500	1600
42	Truscott	6 x 7	350	3500
45	Clifton	6 1/2 x 7	400	3000
45	Corliss	6 x 7	500	2750
45	20th Century	5 1/2 x 7 1/2	500	2450
48	Doman	6 x 8	400	3275
50	Lamb	4 1/2 x 6 1/2	500	1700
54	Standard	6 x 8	400	3200
60	Campbell	6 1/2 x 7 1/2	500	2225
60	Doman	7 x 9	350	3950
60	Ideal	7 x 8	400	3500
60	Jager	6 1/2 x 8	450	2700
60	Lamb	6 1/2 x 7	450	3000
60	Lawley	6 1/2 x 9	400	3400
60	Missouri	6 x 8	500	3000
60	Murray & Tregurtha	6 1/2 x 8	450	3000
65	Corliss	6 1/2 x 7 1/2	450	4000
65	Hall	5 1/2 x 8 1/2	450	2800
65	20th Century	6 1/2 x 8 1/2	450	3700
70	Buffalo	7 x 9	350	4125
70	Pearl	7 1/2 x 9	360	3900
70	Sterling	6 1/2 x 9	400	3400
70	Vulcan	7 1/2 x 8 1/2	425	4200
75	Automatic	7 1/2 x 9	375	6500
75	Harris	6 1/2 x 8 1/2	500	2000
75	Standard	8 x 10	400	5300
75	Stork	7 1/2 x 9	400	6500
75	Winton	6 1/2 x 9	350	5000
80	Ralaco	7 x 9	435	6600
85	Loew Victor	7 1/2 x 8 1/2	400	3000
85	Corliss	7 1/2 x 9	400	7000
90	Kemaco	8 x 10	300	10000
96	Scripps	7 1/2 x 9	450	5300
100	Buffalo	8 1/2 x 9	375	4500
100	Hall	7 1/2 x 11	400	6400
100	Murray & Tregurtha	7 1/2 x 10	400	5000
100	Standard	8 x 10	400	8000
100	20th Century	8 x 10	425	5500
120	Jager	8 1/2 x 12	400	7000
125	Corliss	9 x 10 1/2	350	12000
125	Murray & Tregurtha	8 1/2 x 11	325	6200
125	Winton	8 x 11	350	9000
150	Anderson	9 1/2 x 11	400	7500
150	Automatic	10 x 14	275	15300
150	Automatic	10 1/2 x 15	250	20000
150	Buffalo	10 x 12	300	10500
150	Craig	9 x 10	400	5500
150	Doak	9 1/2 x 11	300	18000
150	Standard	8 1/2 x 11	400	5800
168	Monarch	10 x 10	450	10100
175	Corliss	10 1/2 x 12	325	18000
175	Murray & Tregurtha	10 x 12	325	11000
175	Winton	9 x 14	350	15000
180	Doak	9 1/2 x 12	325	19000
200	Automatic	12 x 16	225	24000
200	Staten Island	12 x 18	200	30000
250	Automatic	13 1/2 x 18	225	26000
250	Corliss	12 x 14	300	24000
250	Speedway	11 x 12	450	11400
300	Corliss	13 1/2 x 15 1/2	275	30000
300	Craig	11 x 12	400	10000
300	Doak	12 1/2 x 15	385	48000
300	Standard	10 x 10 1/2	300	8000
300	Standard	12 x 14	300	9500
300	Staten Island	14 x 21	200	40000
350	Corliss	14 1/2 x 17	250	40000
500	Standard	12 1/2 x 13	300	16000
1000	Standard	16 x 16	280	25000

Eight Cylinders.

RATED H. P.	MAKE	BORE AND STROKE	R.P.M.	WT.
38	Majestic	4 1/2 x 5	500	1100
100	Sterling	6 1/2 x 8	500	4900

4
Cycle.

Medium Duty

4
Cycle.

R. P. M. 501-800.

One Cylinder.

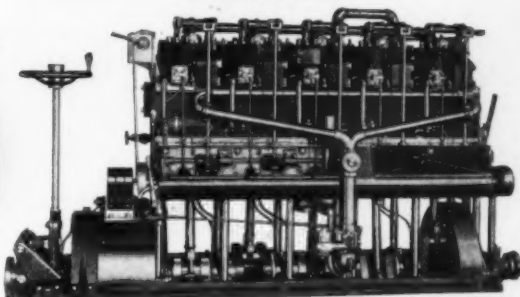
RATED H. P.	MAKE	BORE AND STROKE	R.P.M.	WT.
1½	Nieland	3 x 3½	800	...
2	Nieland	3½x4	700	...
2½	Anderson	4 x 4	650	250
2½	Schaefer	4 x 4	625	170
3	Regal	4 x 4½	650	250
3½	Missouri	4 x 5	600	150
4	Anderson	4½x5	550	375*
4	Guarantee Motor	4½x4½	...	300
4	Missouri	4½x5	600	200
4	Portage	4½x4½	600	275
4	Regal	4½x4½	650	335
5	Fadum	4½x5	600	...
5	Frisbie	4½x5	550	260
5	Gilmore	3 x 3½	750	135
5	Gilmore	4½x5	650	165
5	Missouri	5 x 6	600	225
5	Schaefer	5 x 5	625	220
5	Sparks	4½x5	600	275
6	Hall	5 x 6½	500	625*
6	Loew Victor	4½x5½	600	475*
6	Portage	5 x 5½	575	400
6	Scripps	4½x5	800	335*
6	Strelinger	4½x6	600	330
6	Westman	4½x5½	700	...
7	Fadum	5½x6	600	...
7	Monarch	5 x 6	725	545
7½	Nichols Oil	6 x 6	600	625
8	Westman	5½x5½	700	...
9	Scripps	5½x6	700	500*
10	Nichols Oil	7 x 6	550	700
10	Strang	6½x7	650	800

Four-Cycle Motors.

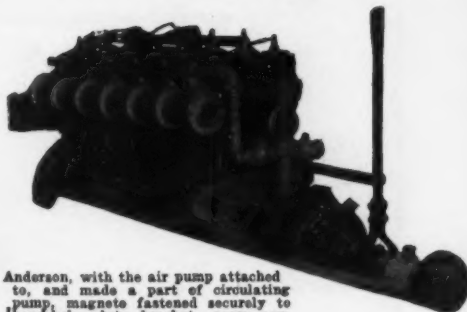
Multi-Cylinder Four-Cycle Motors.



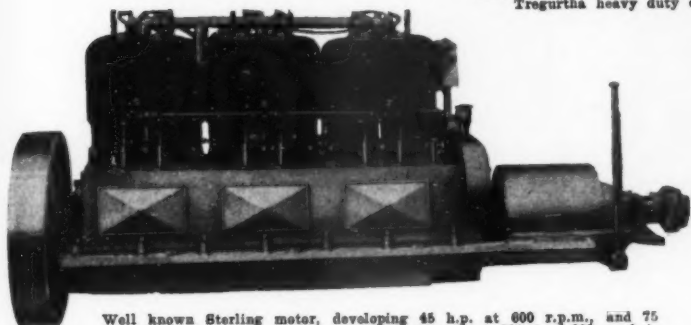
Six-cylinder Speedway motor for all types of motor boats and motor yachts, manufactured by the Gas Engine & Power Co., of New York City.



Five-cylinder 85-95 h.p. Murray & Tregurtha heavy duty engine.



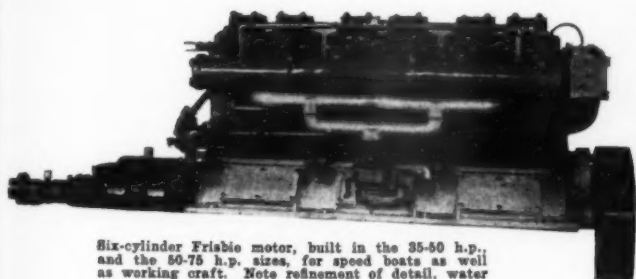
Anderson, with the air pump attached to, and made a part of circulating pump, magnets fastened securely to hand-hole plate bracket, gears covered and protected by oil tight casing.



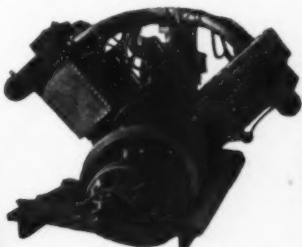
Well known Sterling motor, developing 45 h.p. at 600 r.p.m., and 75 h.p. at 1,000 r.p.m. It has a speed range from 200 to 1,200, and is very silent in operation.



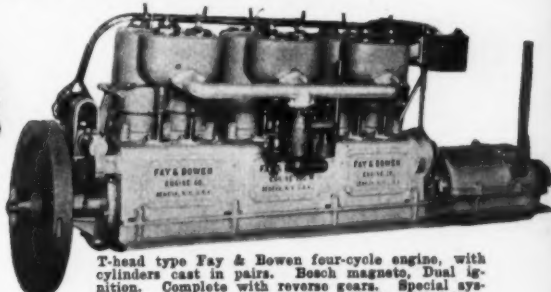
The 20th Century motor, built by the New York Yacht, Launch and Engine Co., at Morris Heights. This motor is a low speed machine, and is used extensively for heavy cruising boats.



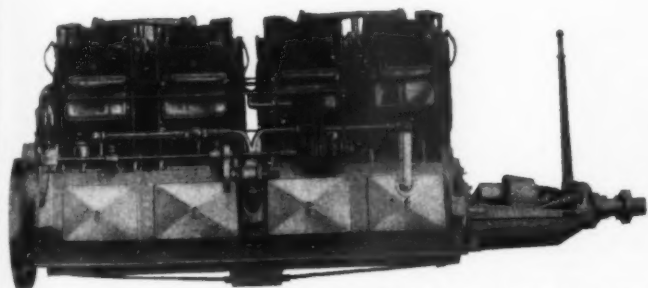
Six-cylinder Frisbie motor, built in the 35-50 h.p. and the 50-75 h.p. sizes, for speed boats as well as working craft. Note refinement of detail, water jacketed air compressor, etc.



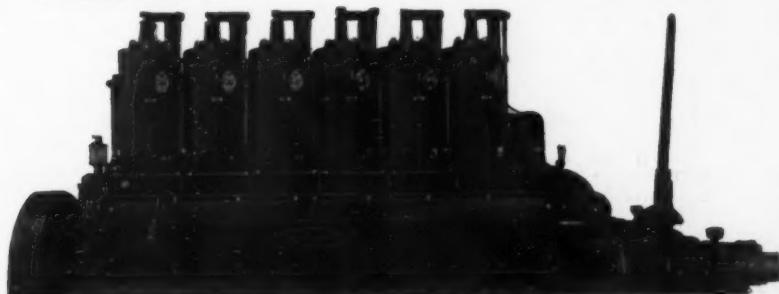
5 1/4 x 7, 150 h.p., 8-cylinder, Achilles motor, manufactured by the Atkin-Wheeler Co.



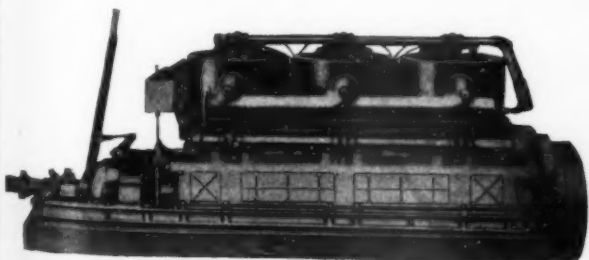
I-head type Fay & Bowen four-cycle engine, with cylinders cast in pairs. Bosch magnets, Dual ignition. Complete with reverse gears. Special system of crank pin lubrication. Built with either aluminum or cast iron base and crank case.



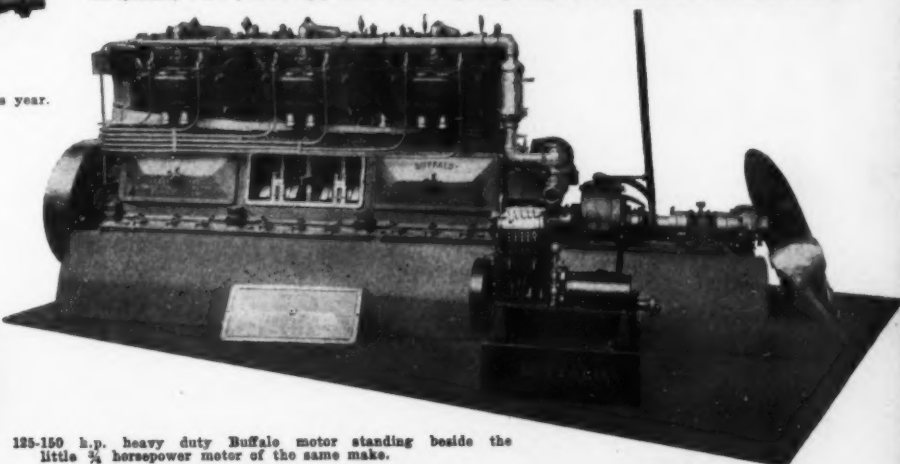
Eight-cylinder, 180 h.p. Sterling racing engine used in many fast hydroplanes this year.



Six-cylinder, 7 x 9", 75-80 h.p., Ralaco motor especially adapted for commercial boats and auxiliaries.



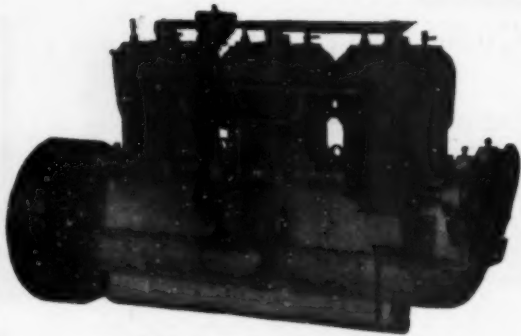
Six-cylinder, four-cycle Campbell motor, manufactured by the Campbell Motor Co., Wayzata, Minn.



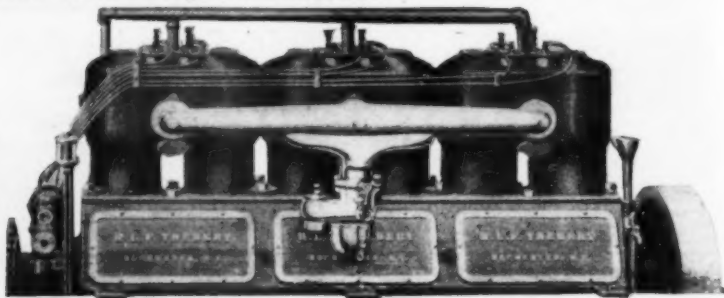
125-150 h.p. heavy duty Buffalo motor standing beside the little 1/4 horsepower motor of the same make.

Four-Cycle Motors.

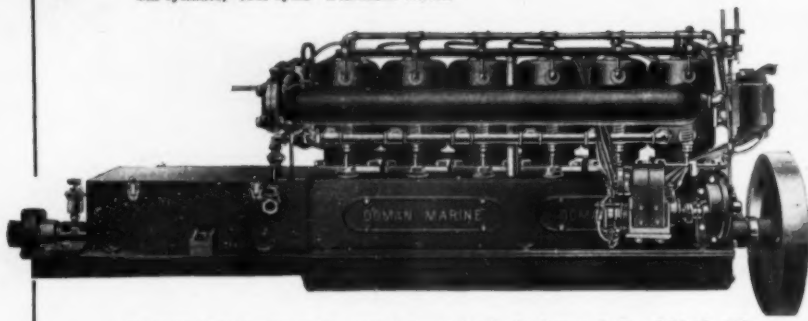
Multi-Cylinder Four-Cycle Motors.



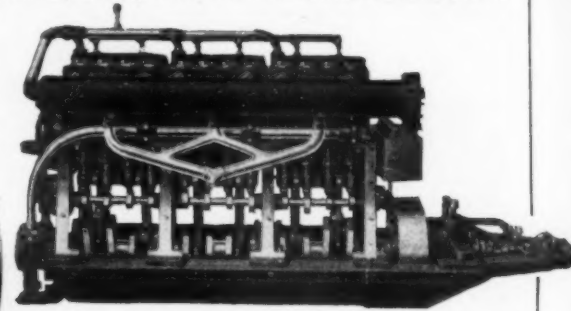
Six-cylinder, four-cycle Wisconsin motor.



Six-cylinder Trebert Reliance motor, manufactured by H. L. F. Trebert, of Rochester, N. Y.



Eight-cylinder Doman motor, manufactured by H. C. Doman & Co., Oshkosh, Wis.



Cam shaft side of Holmes motor, with side or splash plates off, showing working parts. Less than one minute is required to take off these plates.

Three Cylinders.

RATED H.P.	MAKE	BORE AND STROKE R.P.M.	WT.	RATED H.P.	MAKE	BORE AND STROKE R.P.M.	WT.	RATED H.P.	MAKE	BORE AND STROKE R.P.M.	WT.
6	Nieland	3 1/4 x 4	700	15	Fadum	4 1/2 x 5	600	18	Loew Victor	4 1/2 x 5 1/2	600
7 1/2	Schaefer	4 x 4	525	15	Gilmore	4 1/2 x 5	650	18	Portage	5 x 5 1/2	575
7 1/2	Schaefer	4 x 4 1/2	525	15	Lacy	5 x 5	600	18	Speedway	4 1/2 x 5	800
9	Doman	4 x 5	600	15	Schaefer	5 x 5 1/2	525	20	Monarch	5 x 6	725
12	Portage	4 1/2 x 5 1/2	600	15	Stork	5 x 6	550	21	Fadum	5 1/2 x 6	600
15	Doman	5 x 6	535	18	Aristox	4 x 4	800	30	Monarch	6 x 7	725
				18	Frisbie	4 1/2 x 5	550	30	Strang	6 1/2 x 7	650
				18	Lisk	4 1/2 x 5	800	54	Monarch	8 x 9	525

(Medium Duty, Four-Cycle, continued on page 154)

4 Cycle. Light Weight & High Speed 4 Cycle.

R. P. M. More Than 800.

One Cylinder.

RATED H.P.	MAKE	BORE AND STROKE R.P.M.	WT.	RATED H.P.	MAKE	BORE AND STROKE R.P.M.	WT.	RATED H.P.	MAKE	BORE AND STROKE R.P.M.	WT.
2	Strang	4 x 4 1/2	1000	30	Reliance	4 1/2 x 5 1/2	1300	38	Rutenber	3 1/2 x 5 1/2	1000
3	Strang	3 1/2 x 5	900	30	Robert's Motor	5 x 6	850	38.4	Wisconsin	4 x 5	1000
4	Strang	4 x 5	900	30	Rutenber	4 1/2 x 5 1/2	1000	40	Rutenber	4 1/2 x 5 1/2	1000
6	Capitol	4 1/2 x 5 1/2	1000	30	Schlosser	4 1/2 x 5 1/2	1000	42	Jager	4 3/16 x 6	900
6	Mercury	4 1/2 x 5	850	30	Scripps	4 1/2 x 5 1/2	1000	43.3	Wisconsin	4 1/2 x 5	1000
6	Strang	4 1/2 x 5	850	30	Speedway	4 1/2 x 5	1000	45	Scripps	4 1/2 x 5	1000
8	Strang	5 1/2 x 6	850	32	Red Wing	4 1/2 x 5	1000	50	Doman	5 x 6	900

Two Cylinders.

RATED H.P.	MAKE	BORE AND STROKE R.P.M.	WT.	RATED H.P.	MAKE	BORE AND STROKE R.P.M.	WT.	RATED H.P.	MAKE	BORE AND STROKE R.P.M.	WT.
10	Capitol	4 1/2 x 5 1/2	900	35	Fay & Bowen	4 1/2 x 5 1/2	1000	50	Fay & Bowen	4 1/2 x 5 1/2	1000
14	Jager	4 3/16 x 6	900	35	Sterling	4 1/2 x 5 1/2	1000	50	Speedway	4 1/2 x 5	1000
20	Jager	5 1/2 x 6	900	35	Buda	4 1/2 x 5 1/2	1000	52	Buda	3 1/2 x 5 1/2	1400
24	Mercury	5 1/2 x 5	850	35	Rutenber	4 1/2 x 5 1/2	1000	53	Gray	4 1/2 x 5 1/2	1200

Four Cylinders.

RATED H.P.	MAKE	BORE AND STROKE R.P.M.	WT.	RATED H.P.	MAKE	BORE AND STROKE R.P.M.	WT.	RATED H.P.	MAKE	BORE AND STROKE R.P.M.	WT.
7	Scripps	2 1/2 x 3 1/2	1000	40	Loew Victor	4 1/2 x 5 1/2	1000	66.3	Wisconsin	5 1/2 x 7	1200
10	Sterling	2 1/2 x 4 1/2	1000	40	Reliance	5 x 5	1300	72	Scripps	5 1/2 x 6	1000
12	Morton	3 1/2 x 4	900	40	Schlosser	5 x 6	1000	75	Doman	6 x 6	900
15	La Salle	3 1/2 x 4	900	40	Trebert Reliance	4 1/2 x 5 1/2	1000	75	Kuhner	5 x 6	1200
15	Truscott	3 1/2 x 4 1/2	900	40	Wisconsin	5 1/2 x 6	1000	75	Sterling	5 1/2 x 6	1000
18	Lisk	3 1/2 x 4	1100	40	Reliance	5 1/2 x 6	1000	75	Maximotor	4 1/2 x 5	1250
18	Fay & Bowen	3 1/2 x 5	1000	40	Loew Victor	4 1/2 x 5 1/2	1000	75	Reliance Continental	3 1/2 x 6 1/2	1200
20	Capitol	4 1/2 x 5 1/2	1000	40	Niagara	4 1/2 x 5 1/2	1000	75	Trebert Reliance	6 x 6 1/2	900
20	Speedway	3 1/2 x 4 1/2	1000	40	Reliance	5 1/2 x 6	1000	75	Buffalo	6 1/2 x 6 1/2	900
20	Wisconsin	4 x 4 1/2	1000	40	Scripps	5 1/2 x 6	1000	75	Capitol	6 1/2 x 7	1050
22.5	Buda	3 1/2 x 5	1200	40	Loew Victor	4 1/2 x 5 1/2	1000	75	Maximotor	5 1/2 x 5 1/2	1250
24	Red Wing	4 1/2 x 5 1/2	1500	40	Mercury	5 1/2 x 6	1000	75	Mercury	6 1/2 x 6 1/2	850
25	Armstrong	4 1/2 x 5 1/2	850	40	Capitol	6 1/2 x 7	1050	75	Niagara	6 1/2 x 6 1/2	1350
25	Columbia	3 1/2 x 4 1/2	1200	40	Loew Victor	4 1/2 x 5 1/2	1000	75	Van Blerck	5 1/2 x 6	1200
25	Erd	4 x 5	900	40	Trebert Reliance	6 x 6 1/2	900	75	Speedway	5 1/2 x 6	1000
25	Hoosier	4 x 5	900	40	Buffalo	6 1/2 x 6 1/2	900	75	Elo	7 x 7	1000
25	Morristown	4 x 5	900	40	Niagara	6 1/2 x 6 1/2	900	75	Maximotor	6 x 6 1/2	1250
25	Rutenber	4 x 5	1000	40	Maximotor	5 1/2 x 6	1000	75	Robert's Motor	7 x 7 1/2	1000
25	Standard	4 x 5 1/2	900	40	Mercury	6 1/2 x 7	1050	75	Speedway	8 x 8	1000
25.6	Wisconsin	4 x 5	1000	40	Loew Victor	4 1/2 x 5 1/2	1000	75	Crown Special	8 1/2 x 7	1000
27	Hoosier	4 1/2 x 5	1000	40	Mercury	6 1/2 x 6 1/2	850	75			
27	Rutenber	3 1/2 x 5 1/2	1000	40	Trebert Reliance	6 x 6 1/2	900	75			
28	Reliance Continental	4 1/2 x 5 1/2	1300	40	Buffalo	6 1/2 x 6 1/2	900	75			
28	Reliance Continental	4 1/2 x 5 1/2	1300	40	Niagara	6 1/2 x 6 1/2	900	75			
28.9	Wisconsin	4 1/2 x 5	1000	40	Maximotor	5 1/2 x 6	1000	75			
30	Buda	3 1/2 x 5 1/2	1200	40	Robert's Motor	6 x 8	900	75			
30	Gray	4 1/2 x 5 1/2	1000	40	Maximotor	6 x 8	900	75			
30	Jager	4 3/16 x 6	900	40	Mercury	6 1/2 x 7	850	75			
30	Loew Victor	4 1/2 x 5	1000	40				75			

Six Cylinders.

RATED H.P.	MAKE	BORE AND STROKE R.P.M.	WT.
7	Winton	2 1/2 x 3	1000
33.75	Wisconsin	3 1/2 x 5 1/2	1000

Ten Cylinders.

RATED H.P.	MAKE	BORE AND STROKE R.P.M.	WT.
200	Roberts	5 1/2 x 6	1200

'A' MERICAN

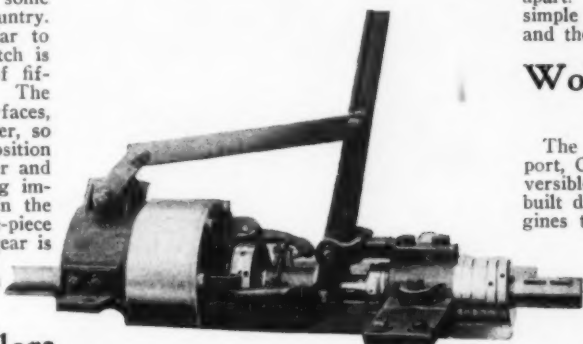
MOTOR · BOAT · PARTS

AND · ACCESSORIES

Paragon Reverse Gears.

The Evans Stamping & Plating Company, of Taunton, Mass., have been making the Paragon gear for many seasons. Although they make gears for all types of boats, they are calling special attention to their high speed type gear for 1914. This gear, which has been used during the past season on some of the best known speed boats in the country. The construction of this gear is similar to the regular type of Paragon. The clutch is of the multiple disc type consisting of fifteen alternate bronze and steel plates. The plates are made with absolutely flat surfaces, and are carried by a special steel carrier, so that when the gear is in the neutral position the plates are separated from each other and there is no chance of any motion being imparted to the propeller due to drop in the friction plates. The brakeband is a one-piece casting of special bronze. The speed gear is made in only two sizes, but the regular line of medium and heavy duty gears comprise a very extensive line.

Reversing Devices



Paragon reverse gear of the multiple disc type.



The bronze and steel friction plates of the Paragon clutch.

gears are made in a number of types of both enclosed and open-case models. They are all of the planetary type, and have the shifting lever on either the side or in the center. The gears are made so as to be suitable for all sizes of marine engines, and have been on the market for many years. The adjustment of the clutches is simple and can easily be accomplished without taking the gear apart. All parts of the gears are made as simple as is consistent with proper efficiency, and the outfits are very compact.

Wolverine Reverse Gears and Wheels.

The Wolverine Motor Works, of Bridgeport, Conn., make both reverse gears and reversible propellers. The reverse gears are built directly onto the heavy-duty marine engines that they make. Their reversible propellers, however, are ready to be attached to any boat or engine. These wheels are made in all sizes, from ten to twenty-six inches in diameter. They are constructed from the best quality bronze, and are finished to gauge, all parts being interchangeable. The blades have the same shape in forward pitch as a solid wheel, and it is claimed that they are quite as efficient. Should the blades be damaged in any way it is possible to renew them at a cost much less than the price of a new solid wheel. When installed upon auxiliary boats it is possible to turn the blades so that their edges are parallel with the direction the boat is taking, thus relieving the resistance when the boat is under sail.

Pearl Reverse Gears.

The Pearl Machine Co., of Detroit, Mich., is the maker of a rather unique reversing gear for use on motor boats. The device contains no gears whatever, the reverse motion being obtained by the use of a friction wheel. It is claimed by the makers that this gear does not slip, and that it gives an instant reverse without any unpleasant jarring. Further particulars will be gladly sent upon request to the company.

National Gears.

This gear is made by the National Gear Co., of Detroit, Mich., in only one size and model, which is designed to hold engines up to six horsepower at 500 r.p.m. The gear weighs only twenty pounds, and, being so com-

Sintz Reversing Propellers

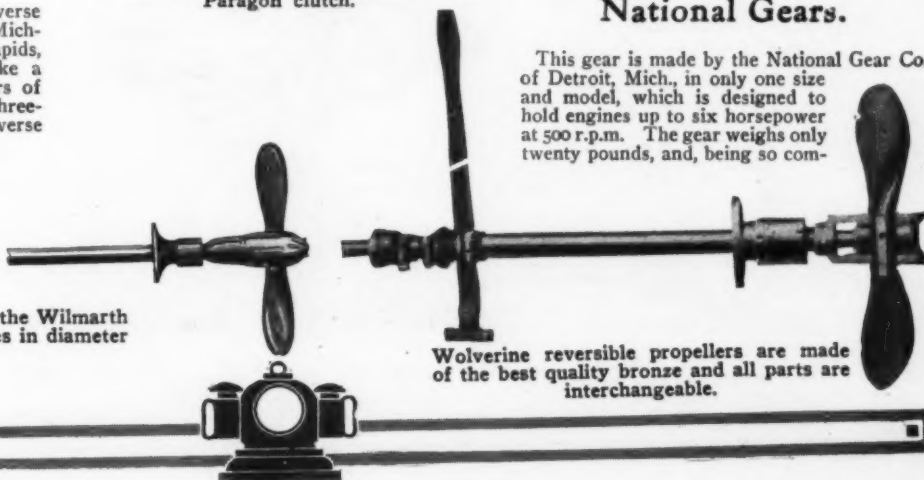
These reversible propeller wheels are made by the Wilmarth & Morman Company, of Grand Rapids, Mich., in sizes from 8 inches in diameter upwards. The wheel is extremely simple, being composed of but three working parts, the hub, shell and blades. Inasmuch as the blades are fastened independently of each other, a broken one can be replaced very easily and economically. The makers claim that their wheel is so built that the mechanism on the inside is stronger than the blades, and that the blades are as strong as the regular type of solid wheel. The result of this is that in case the wheel should strike an obstruction one blade will be damaged, but the internal parts will not be harmed. These wheels are made in either two or three-blade types, and are in use on boats of all types, from a thirteen-foot Bumblebee to a large Gloucester fisherman.

Michigan Wheel Co. Reverse Gears.

A very complete line of reverse gears is manufactured by the Michigan Wheel Co., of Grand Rapids, Mich. This firm also make a line of reversing propellers of both the two and three-blade types. The reverse



Sintz reversing propellers are made by the Wilmarth and Morman Co., in sizes from 8 inches in diameter upwards.



Wolverine reversible propellers are made of the best quality bronze and all parts are interchangeable.

Parts and Accessories.

fact, is very desirable for small boats that otherwise would not have any gear. The fact that this gear sells for \$10 makes it possible for small boat owners to equip their boats. The makers claim that the material entering the gear is of the highest grade.

The Johnson Marine Reverse Gear.

The gears made by the Carlyle Johnson Machine Co., of Manchester, Conn., are very small and compact, owing to the fact that vanadium steel is used in the construction of all the steel parts. These gears are made in three models, holding from 3 to 40 h.p. The feature of these gears is their small size, the No. 1 gear being only $1\frac{3}{4}$ inches over all and $6\frac{1}{2}$ inches wide, the weight being only 21 pounds with the iron case and 18 pounds with aluminum. The gears are of the double-clutch type, the adjustment being made through small hand-hole plates in the top of the case. The shifting lever is in the center, and the cases completely enclose the mechanism, thus allowing the gears to run in an oil bath. Stuffing boxes on both bearings prevent the escape of oil from the ends, and the makers claim that when running, the gear is entirely noiseless, and that there is not the slightest leakage of oil or dirt from the outfit.

Joos Reverse Gears.

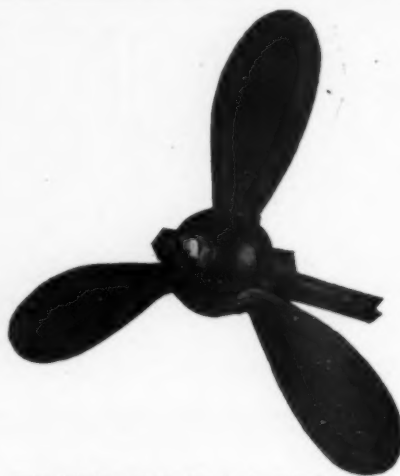
The Snow and Petrelli Mfg. Co., of New Haven, Conn., have brought out a very complete line of reverse gears for both high speed and heavy duty. Their leader for 1914 will be the Duplex Drive Gear. This gear consists of a double set of multiple discs so arranged to take all the driving strain entirely off the gear, thereby avoiding all back lash and consequent distortion of gear teeth. The gearing is quadrupled, so that the strain of reversing is distributed at four points around the circumference of the main gears. The reverse is at the same speed as the forward drive. The company will continue to make its line of high-speed gears for medium and high-speed engines, and they will also make gears to order. A rear starter is also one of their most successful specialties which they will make in an improved form for 1914.

The Gray Reverse Gear

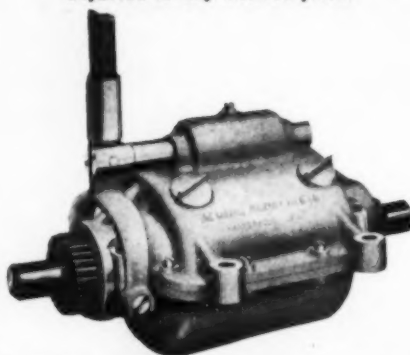
The Gray Motor Company, Detroit, Mich., is making a reverse gear that has given very good service for some years. The design is simple; it is strongly built, and positive in its action. All working parts of the gear are enclosed in an oil-tight case, so that positive lubrication is a feature, and there is no oil being thrown about the boat. This case also prevents dirt and foreign matter getting into the working parts of the gear and causing trouble. The adjustment of the gear is very simple, as the removal of a hand-hole plate will give access to the adjusting screw which is kept in position by the use of a lock-nut. The adjustment of the reverse brake band is exactly the same as that for the ahead drive. Literature regarding this gear will be sent upon request.

Gies Gears.

The Gies Gear Company, of Detroit, Mich., manufacturers of the Gies Reverse Gears state that there are over 15,000 of these gears in use. They manufacture three models of these gears, all of the planetary type. The first model is known as "Special No. 1" and transmits $1\frac{1}{2}$ h.p. at 100 revolutions of the engine. This model sells for \$12. Their model "A" gear transmits $2\frac{1}{2}$ h.p. also at 100 r.p.m. This gear cost \$24. The model "B" gear will successfully hold an engine developing 4 h.p. per 100 r.p.m. This last



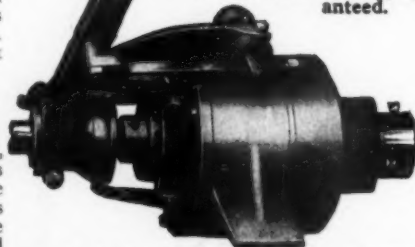
The blades of the F. I. A. wheel can be adjusted to any desired pitch.



Johnson vanadium steel reverse gears are very small and compact.



The Moore reversing switch is fully guaranteed.



Joos's duplex drive gear which reverses at the same speed as the forward drive.



Marine Iron Works gear for

stern and paddle wheel installations.

type of gear is sold for \$48, complete. The company publishes an attractive catalogue which will be sent free upon request.

Ball Reverse Gears.

The New York Gear Works, of Brooklyn, N. Y., is the maker of a line of reverse gears that have been on the market for many years. Their line consists of several sizes of gears, all intended for heavy-duty work. The devices are of the planetary type with a cone clutch for the drive ahead. The shifting lever is in the center, and the take-up of the gear is located in a very accessible place. The firm have gotten out a catalog that fully describes their line and gives prices and dimensions.

The Moore Reverse Switch.

J. B. Moore, of Latrobe, Pa., is the manufacturer of the Moore Reverse Switch for two-cycle engines. This device is intended to take the place of a reverse gear on single-cylinder machines, and it is claimed that it gives a positive reverse every time when installed according to directions. The device only weighs about one pound, takes up less than twelve square inches of space, and can be installed by anyone who is able to bore and tap three holes. Although this device sells at the low price of \$7.50, the maker guarantees that it will do anything that a reverse gear will, except give a neutral. It requires no lubrication or adjustment, and the maker guarantees it to last as long as the engine upon which it is installed. The New York office of the device is at 136 Liberty Street.

The Ferro Reverse Gear.

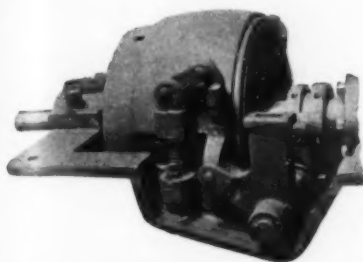
The Ferro Machinery and Foundry Company, of Cleveland, O., makers of the Ferro two-cycle engine, also make a line of reverse gears that have been on the market since 1909. The No. 1 gear is rated at 2 to 3 h.p. at 100 r.p.m., and is built to be fitted to $1\frac{1}{2}$ -inch, $1\frac{3}{8}$ -inch and $1\frac{1}{2}$ -inch shaft. The No. 2 size is rated at $1\frac{1}{2}$ h.p. per 100 r.p.m., and can be fitted to $1\frac{1}{4}$, $1\frac{3}{8}$, and $1\frac{1}{2}$ -inch shaft. The No. 3 size rates at $2\frac{3}{4}$ h.p. per 100 r.p.m., and is built to fit shafts $1\frac{3}{4}$ inch, $1\frac{1}{2}$ inch and $1\frac{3}{8}$ inches in diameter. When installed on Ferro engines the gear can be bolted rigidly to the engine crankcase. This feature is not necessarily essential, as the gear is adaptable to general application.

Marine Iron Works Gears.

The Marine Iron Works, of Chicago, make a specialty of reverse gears for use with stern wheel installations. As these gears must be made to certain specifications the firm does not issue a catalog or price list, but they will be glad to furnish full particulars upon request. The gears are made for either single or double-chain drive out of high-grade steels. The gears are arranged so that they can be controlled from any convenient part of the boat either by levers or hand-wheels and gears. The pinions are cut steel, and the gears are fitted with wood block friction. Bearings are of semi-steel lined with white metal.

Automatic Reverse Gears

The Automatic Machine Co., of Bridgeport, Conn., make a line of very heavy-duty reverse gears intended for use on commercial boats or other vessels having large powerful motors. The pinions and shafts of these gears are made from a high-grade forged steel, the former being bushed with bronze bushings and running on hardened steel studs. The clutch can be taken apart quickly and the friction ring shaft and



The Automatic reverse gear for heavy duty commercial use.

coupling are bolted in one piece to the coupling on one end of the crankshaft. Both forward and reverse motion is controlled by the same lever. The reverse is obtained by means of a wide band on the outside of the drum and a rock and pinion with right and left screws.

Westman Reversible Propellers.

These wheels are made of a high-grade bronze and are made in both two and three-blade types either right or left-handed. They are made by the Enterprise Machine Company, Minneapolis, Minn. They are very compact, easy to install and operate, and it is claimed that they are just as efficient as a solid wheel. Circulars fully describing the wheels will be sent upon request.

The F. I. A. Reverse Propellers.

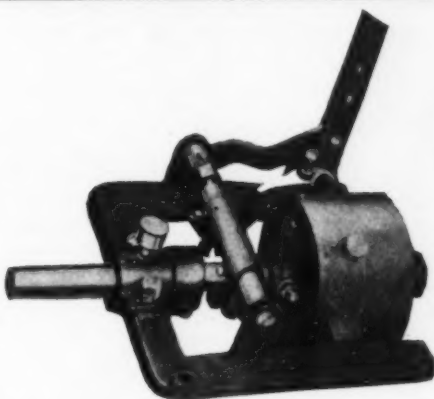
This outfit is made by the F. I. A. Reversible Propeller Company, of Syracuse, N. Y., in both the two and three-blade types. The blades of this wheel are adjustable to any desired pitch, and in case a blade is broken a new one can be fitted for less expense than a whole new wheel would cost. The wheels are made in all sizes from 15 inches to 36 inches in diameter, and are suitable for boats of practically all sizes. The firm also makes a wheel of the semi-solid type in which the blades are adjustable to any desired pitch, but are not reversible except by the use of some separate reversing mechanism.

The Roper Safety Propeller.

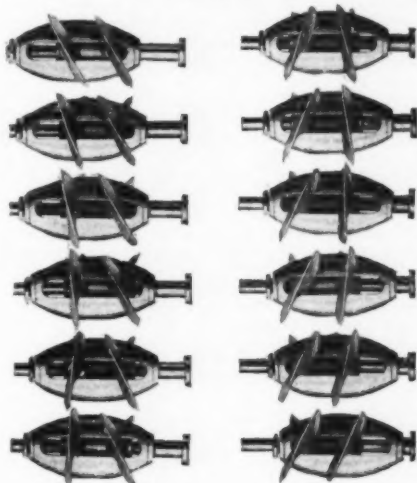
The C. F. Roper & Co., Hopedale, Mass., make the Roper Safety Propeller, which is much like the ordinary reversing propeller except that there is an extra set of blades, set just ahead of the regular set. This second set is so designed that no matter what the position of the controlling lever is there is never any time in which the engine races, as the load is always maintained. This makes it possible to control the boat upon entering to a float from any speed point without engine con- claim that fast as the peller, and made of the



F. I. A. reversing propeller wheels are made of bronze and are highly finished.



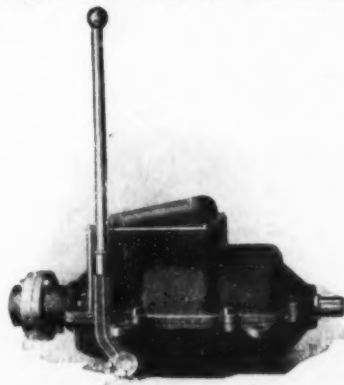
The Westman reverse gear, made by the Enterprise Machine Co., makers of reversible propellers.



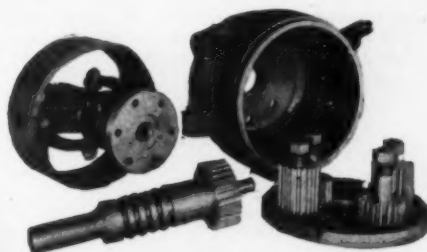
The Roper propeller, showing how the two sets of blades act against each other in neutral and prevent racing of the engine.



A three-bladed Michigan reverse propeller showing also the various parts of the wheel.



The Baldridge reverse gear in which there is a handhole plate for easy adjustment.



The Automatic gear disassembled, showing interior construction.

rials. For those who desire it the company makes a bow control so that the boat can be perfectly controlled from any convenient point. The company also make the Roper Marine Speedometer. This device tells the speed of the boat at all times, and is very easily installed.

The Baldridge Reverse Gears.

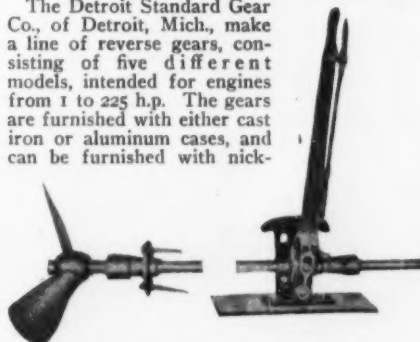
The Baldridge line of gears, made by the Baldridge Gear Company, of Detroit, Mich., comprises many different sizes of gears. These devices are suitable for all kinds of marine engines of from 2 to 80 h.p., and sell at prices ranging from \$20 to \$115. One of the advantages claimed for the Baldridge gear is the fact that the case entirely encloses the mechanism and that proper lubrication can be given the interior, owing to the fact that oil and grease are not thrown all over the boat. The main shaft of this gear is unbroken and extends from the engine coupling directly through the gear and is supported on bearings at each end of the case. The gear is very compact and light. The gears are of the finest quality open-hearth steel, and the gear cage is also of a high-grade alloy steel. The adjustment of the gear is a very simple matter, as there is a hand-hole plate in the case that gives access to the adjusting screws.

B. & B. Reverse Propellers.

Following their success with solid wheels, the Bryant & Berry Company, of Detroit, Mich., have put on the market a speed propeller of the reversible type, in two and three-blade styles, and right and left hand. The same metal which goes into the manufacture of the solid wheels goes into the construction of these. These outfits are made as light as it is possible to have them and yet be consistent with safety, and all parts are highly polished. The hub is smooth, and all joints are closely fitted, making it impossible for sand to get inside, at the same time making the wheel practically weedless. The wheels are perfectly balanced, and, in many cases, the speed of a boat has been increased by their use.

Standard Reverse Gears.

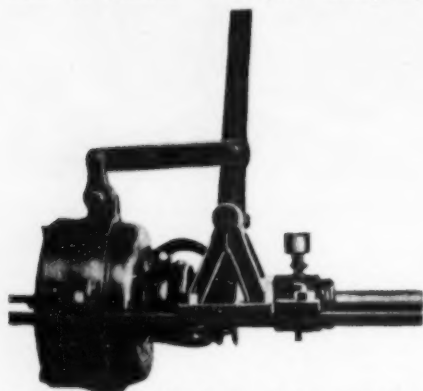
The Detroit Standard Gear Co., of Detroit, Mich., make a line of reverse gears, consisting of five different models, intended for engines from 1 to 225 h.p. The gears are furnished with either cast iron or aluminum cases, and can be furnished with nick-



The light, strong, practically weedless Bryant & Berry propeller.

Parts and Accessories.

eled trimmings and enameled case for a small extra charge. The prices of the gears range from \$18 upwards. A complete catalog will

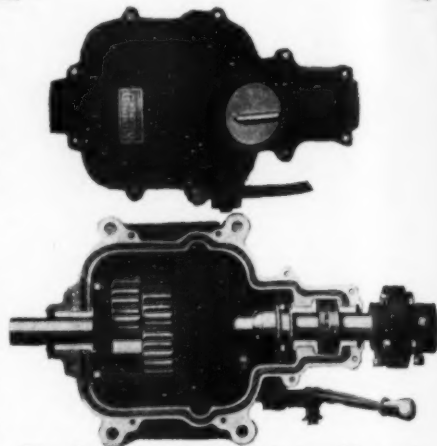


The Standard clutch is of the expanding double finger type.

be sent upon application. The Standard gear contains no bevel gears, no internal gears, no chains and no gear cages in its mechanism, but has a set of five spur gears made of a high-grade steel. The clutch is of the internal expanding, double-finger type, and the reverse band is self-centering and can be adjusted from the outside of the case. The case is absolutely oil-tight, and lubrication is by splash from the lower half of the case. The control lever is in the center of the case, and locks in the various positions.

The Oxford Reverse Gear.

The L. D. Robbins Co., of Lynn, Mass., are the makers of a gear somewhat different from the others that are upon the market. Their gear has a clutch of the disk type with a positive drive, and it is claimed by the firm that this drive prevents all unnecessary wear on the mechanism of the gear. They also state that the gear can be thrown from full speed ahead to full speed astern without damage. The mechanism of the gear is very simple and compact, and positive in action.



The Oxford gear, which it is said, can be thrown from full speed ahead to reverse without damage.

Electrical - Appliances

Anderson's Spark Plugs.

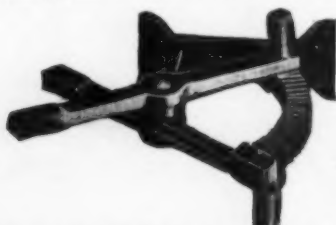
The Anderson Glass Spark Plug is manufactured by the Anderson Spark Plug Co., of Baltimore, Md., and consists of a steel shell with a block of clear glass welded through the center of the shell. The center electrodes run through the glass, and at all times the condition of the spark can be observed through the glass. The glass, of course, is a perfect insulation, and is absolutely gas-tight. The price is \$1.50.

General Electric Co.'s Generating Sets.

The General Electric Co., Schenectady, N. Y., have for years built gasoline engines to meet the exacting specifications and rigid tests of the United States Government. These, coupled to generators of established reputation, constitute the company's gasoline electric generating sets, and no effort has been spared to make these masterpieces of reliability and economy. The parts are accessible and interchangeable; they operate quietly and with a minimum of attention. The engines of sets rated 3, 5, 10 and 25 kilowatts are of the four-cylinder, four-stroke cycle type. The engine of the one kilowatt set is of the single-cylinder, two-cycle type. This is designed to meet the demand for a small, well regulated, substantial lighting and power set, and is constructed of as few parts as are compatible with efficiency, reliability and strength.

J. D. Spark Plugs.

The Jeffery Dewitt Co., of Detroit, Mich., will offer fifteen types of spark plugs this season. The line will embrace both conical and petticoat types attached to spark plugs with or without the closed ends and with or without platinum points. In addition to the well-known



The spark and throttle control of the Mechanical Devices Co.

Reliance Plug and the J. & D. Plug, the company will market a new type of plug which will be known as the Visible Spark Plug. This plug has incorporated in the porcelain a piece of plate glass, through which the center electrode can be seen. There is a small gap in the electrode, across which the spark has to jump. The gap on the electrode can be adjusted so that, if necessary, it can be closed entirely and only opened when it is necessary to inspect the ignition circuit. The makers claim that the small gap will increase the heat of the spark at the terminals, and will in no way use up any extra current. They also claim that when the plug is fouled it can be cleaned automatically by increasing the spark gap. This plug sells for \$1.

Comet and Sootless Spark Plugs.

The Oakes & Dow Co., of Boston, Mass., are the manufacturers of a general line of ignition specialties for motor boats. Among their specialties may be mentioned the Comet and Sootless Spark Plugs. Both of these plugs are of the mica insulated type. In the Sootless plug there is no asbestos packing to blow out or loosen, and there are other improvements. Comet spark plugs are made with the mica insulating wound around the center electrode instead of being slipped on in the form of small washers. The company claim that the plugs using washers for insulating purposes do not have anywhere near as great insulating properties as their Comet and Sootless plugs. These plugs are made in various sizes and sell at a popular price.

Ideal Switches and Plugs.

The Ideal Switch Co., Inc., of Plainville, Conn., manufacture lines of switches that appeal most strongly to power boat users. The single-acting type embodies the Ideal spring contacts in a new form which renders them exceedingly compact, a feature that is very strong when space is at a premium. No. 502 is a front-connected, quick-acting switch, with a positive stop, making a clean contact and delivering full current strength to the engine. It is claimed that no amount of rocking can throw this switch out of the stop position. Prices range from 30 cents to 75 cents. The firm also makes a spark plug of the mica type, having a new method of inner insulation.



Ampco Distributors.

The American Motor Parts Co., of Philadelphia, Pa., make a distributor designed for use with marine engines of the jump spark type. The device is made so as to be suitable for engines of any number of cylinders, and takes the place of magneto, coils and batteries, as the entire ignition apparatus is within the case that is mounted on the regular timer shaft of the engine. The makers claim that their device insures perfect synchronism and that the motor can be started with one-quarter of a turn. A postal card request for a circular regarding Model M distributor will bring further particulars.

The Mea Magneto.

The Mea magneto, manufactured by Marburg Bros., of N. Y. City, is a radical departure from the usual horseshoe type. It is ball shaped and is so placed that its own axis coincides with that of the armature. By advancing and retarding this magneto jointly with the timing device the spark is always produced in the most favorable parts of the magnetic field independently of the timing.

The "Premier" Switch.

This switch, which is intended for use on motor boats, is manufactured by the W. S. Beebe Co., of New Haven, Conn. The switch is of the double point type so that either battery or magneto can be used, and the contacts are of the knife blade variety mounted on a very strong hard rubber base. The connections are made from the back of the switch, the wires passing through holes in the base, the holes being large enough so that the insulation can be drawn through. One of the chief features of the switch is the fact that it is operated by a removable oval button.



The Premier switch is operated by a removable oval button.

Parts and Accessories.



The Monarch spark plug.



The E. J. Willis switch board.

Monarch Ignition Devices.

The Monarch line of ignition devices is manufactured by the Benford Manufacturing Company, of Mount Vernon, N. Y., and includes spark plugs, timers, gas lighters, etc., for marine purposes. The model B timer, which is specially constructed for motor boats, is a small compact device standing only $2\frac{3}{4}$ inches high and $2\frac{1}{4}$ inches in diameter. The contacts are of the roller type, the roller being held outwards by a spring, the entire mechanism being exceedingly simple and reliable. The entire interior construction is made from solid brass casting. These timers are made with either a short arm, so that the controls can be led elsewhere, or with a handle for operation at the motor. The firm's spark plugs are made with either porcelain or mica insulation for motor boats and motor cycles. Their mica insulated magneto plug with a four point sparking electrode has given excellent service throughout the country. The plug is very heavily insulated and it is claimed that oil will not break down the circuit.

Sturtevant Gasoline Electric Generating Sets.

Sturtevant gasoline electric generating sets are built by the B. F. Sturtevant Company, of Boston, in three sizes, 5, 10 and 15 kw. capacity, the largest having six and the two smaller having four cylinders. The sets are self-contained, the engine and generator being on the same base and all necessary pumps and similar accessories being made a part of the set. The engines are of the four-cycle type with vertical, water-cooled cylinders. The smaller set has "L"-head cylinders cast en bloc and the larger sets have "T"-head cylinders cast in pairs. Lubrication is forced and the cooling water is circulated by a positive pump. Bosch magneto and spark plugs are used. The carburetor is of the Sturtevant constant level type and is supplied by a fuel pump operating from the camshaft. A high grade fly ball governor ensures a constant speed and prevents unsteadiness of the lights under changes of load.



Gas generator and two types of Neverout searchlights.

Lebby Lighting Systems.

The Lebby Engineering Company, of Charleston, S. C., make a line of ignition and lighting systems for use on motor boats. These outfits are not equipped with any automatic devices, and are especially adapted for use on small boats that have no room for the heavy and cumbersome lighting systems with which larger boats are equipped. The outfits are made in from four to fifteen-light capacity, and consist of six-volt storage battery, charger, lamps, wire fixtures, etc. In fact, a complete outfit ready to install on any boat. The outfits sell for from \$65 upwards.

Mosler Ignition Specialties.

Vesuvius Spark Plug is one of the leaders of the A. R. Mosler Company, of New York. Plugs of this type are made in all sizes and threads and also in special models to fit various engines that are not arranged for the standard plugs. The plugs are constructed on the well known Mosler principle, and it is claimed that a sheet of flame is forcibly shot into the combustion chamber of the engine, thus igniting the mixture in quicker time than the ordinary plug. The company also make the well known Spit-Fire plugs, and the Mosler Gasoline Strainer and Separator.

Czar Spark Plugs.

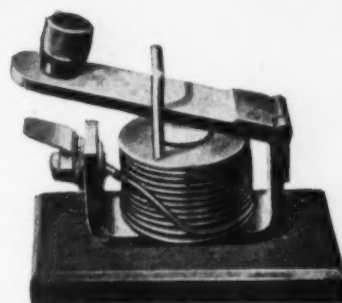
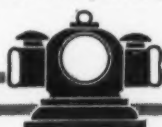
This spark plug is manufactured by the Czar Ignition Company, of Buffalo, N. Y., a subsidiary company of the Frontier Specialty Company. The plug has a priming cup embodied in its construction, but instead of the cup being screwed into the shell, it is mounted on top of the plug, and the gasoline or other liquid that is put into the cup runs directly down the center electrode, thoroughly cleaning the points, as well as priming the engine. The installation consists of a heavy, tapered mica sleeve, which the company claim no expansion or contraction can make leak, and that it cannot absorb oil. Owing to this feature, the plug is practically indestructible. The plug is made in the regulation sizes to fit all engines, and is thoroughly patented.

Hi-Po Waterproof Batteries.

This line is manufactured by the Hi-Po Waterproof Battery Company, Brooklyn, N. Y. Among other virtues claimed for them is the fact that they are absolutely waterproof, and the company states that a set of five batteries were installed in water and were used for demonstrating purposes for sixteen months. This is, of course, of much importance when batteries are used on small open boats, where they are constantly being wet. The company also make a spring battery connector, which is self-locking, and which, they say, will not jar loose. The terminals can be fastened to any wire without the use of solder.

Neverout Searchlights.

These outfits are manufactured by the Rose Manufacturing Company, of Philadelphia, and are intended especially for motor boat use. The lights are made for either acetylene or electricity, and can, consequently, be used on all types of boats. One of their leaders is a $6\frac{3}{4}$ -inch light, designed for electricity and equipped with a 16-candlepower light, although other candlepowers can be supplied if desired. The searchlight is designed to be installed on some convenient part of the deck and stands, approximately, two feet high, so that it can be operated by a person standing. The standard and light is instantly removable by releasing one thumb-screw, and the circuit is automatically made or broken when the light is erected or dismantled. They also make a deck type of light, which, however, is much lower than the former searchlight, and is intended to be mounted on cabin houses, when the roof is within easy reach of a person standing in the cockpit.



Champion cut-out for battery charging.

Champion Accumulators.

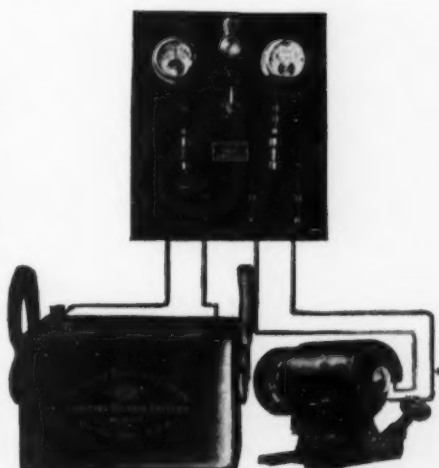
Hector MacRae, of Baltimore, Md., is the maker of the well known Champion Accumulators and motor boat lighting outfits. These outfits are made complete, so that they can be installed in any motor boat without the necessity of an experienced electrician being called in. The outfits are also very simple to operate and keep in condition, and anyone can have electric lights on his boat without having any special knowledge of electricity. The maker will send further information upon request to those that are interested.

Champion Spark Plugs.

This line of spark plugs is made by the Champion Spark Plug Company, of Toledo, Ohio, in four different models for marine purposes. Their leader for motor boats, however, is their priming plug, which consists of their regular porcelain plug with a new model priming cup fastened into the shell. The cup is absolutely gas tight, and can be opened or closed easily with a slight twist of the fingers. The priming placed in this plug runs directly down to the base of the plug, where it is exploded as soon as the spark occurs.

Apico Electric Systems.

The Apple Electric Company, of Dayton, Ohio, have been specialists for many years in motor boat lighting outfits, which they make in all sizes and types suitable for boats from 16 feet long upwards. Their smallest outfit is sold complete for \$65. This outfit will ignite the engine and also furnish 30 candlepower of light, which can be divided up to suit the tastes of the owner. Their second size sells for \$110 and has twice the output of the first size. The third outfit, which is intended for larger sizes of boats and small yachts, sells for \$195, and will light 150 candlepower. The firm also make a complete line of searchlights, electrical side lights, and electric brackets and cabin fixtures.



The Apico electric generator with switchboard for marine use.

Parts and Accessories.

Splitdorf Electrical Equipment.

The present demand for the effective lighting of motor boats has resulted in manufacturers making exhaustive trials of various devices calculated to simplify the operation of lighting plant while retaining its efficiency. The Splitdorf Electrical Co., of Newark, N. J., confirmed in the belief that such a lighting outfit to be ideal should have as few parts as possible, has designed an equipment consisting of a highly efficient generator, a fuse box and ammeter, and all controlling devices, that is, the parts regulating the output of the generator as well as the flow of current to the battery incorporated in the machine, which is dust, oil and waterproof. A feature of the generator is the method of compensating for the various boat speeds. This is accomplished by the differential windings and obviates the use of friction clutches, governors, or similar devices.

New Bosch Switch.

The Bosch press button key switch, which supersedes the Bosch spring plunger and key switches, is ready for the market. The connections of this device are very simple. To the terminal in the rear a wire is attached, leading to the primary or grounding connection of the magneto, while a second wire is attached to the terminal of the collar clamp, surrounding the cylindrical switch barrel and is led to some part of the engine or frame that makes a good ground. Pressure upon the key establishes a ground of the primary winding, thus making the magneto inoperative. The switch is made by the Bosch Magneto Co., of 223 W. 46th St., N. Y.

Edison Primary Batteries.

These sparking outfits are made by Thos. A. Edison, Inc., of Orange, N. J., and are particularly desirable for use on motor boats. The cells are of the primary type and it is claimed that recharging is necessary only once a season at the most. This recharging is very simple, and there is no deterioration such as there is with dry batteries in case the cells are left unused for any length of time. It is claimed that these cells are not injured by moisture, and that they are absolutely dependable, owing to the fact that they lose their charge slowly and indicate a long while before charging is necessary that such is the case. These batteries are economical to purchase; price lists will be sent upon application.

Peerless Indicator Spark Plugs.

The Toledo Spark Plug Mfg. Co., Toledo, Ohio, is marketing a new type of visible spark plug. The company state that after several months of experimenting and testing, the construction of this plug has been perfected which enables them to place a money-back guarantee upon it. One of the new features of the plugs is that it may be adjusted while the motor is running which enables the user to employ it as an ordinary type of plug except for locating ignition troubles. It may be used with either one or two gaps.

Electric Search Lights.

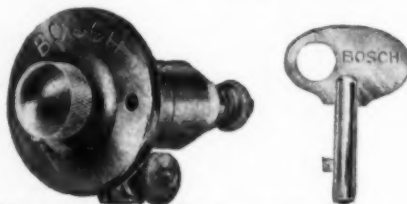
The Carlisle & Finch Company, Cincinnati, Ohio, handle a very complete line of searchlight projectors from 7" in diameter upwards. The projectors from 7-9 inches are intended for motor boats and small yachts. These can be finished with a bracket for mounting against a bulkhead or with a short base so they can be mounted directly on deck. A specially high base for use on flush deck boats where the searchlight must be brought up to the level of the operators waist is also provided. These projectors either have a handle on the back by which they can be swung or a control rod, so that they can be mounted on top of the pilot house or cabin and operated from deck below. The swinging mechanism on these lights is so simple that it can be operated with one hand.

New Dayton Light Plants.

The Dayton Electrical Manufacturing Co., Dayton, Ohio, have recently introduced two attractive lines. The first is a 20 light plant, which has sufficient capacity to carry twenty 12 c.p. Tungsten lamps at one time, the battery carrying all lights for eight hours on a single charge, half the number for sixteen hours or five lamps for thirty-two hours. The company manufacture and supply equipments suitable for motor boats of any size and will send catalog on application. The second novelty is a portable lamp with guard and handle, fifteen feet of cord and attaching plug. This is a well made and most useful article; its price is \$2.50 complete.

Cello Searchlights.

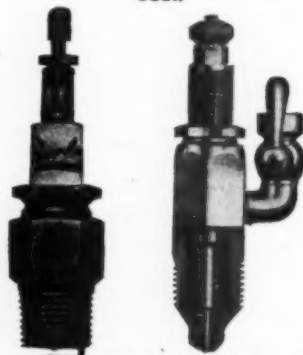
A line of electric searchlights for motor boat use is the specialty of the A. S. Campbell Co., of Boston Mass. These lights are of the hand operated type and are intended to be connected to an ordinary set of dry batteries. There is a focusing screw on the back of the light so that the light can be thrown so as to cover the greatest distance in a straight line ahead, or else be diffused so as to cover a wide range a short distance ahead. The lights are fitted with a neat pedestal and make a handsome deck fitting as well as a useful article. A high grade reflector is



The new Bosch press button key switch.



E. J. Willis' electrical equipment for the boat.



Peerless visible spark plug. The All-in-One spark plug.



Five sizes of the U. S. L. storage battery for marine use.



in back of the bulb and throws a very powerful light, considering the fact that the light is of the incandescent type and not an arc light. These neat little outfits sell for from \$10 to \$16.

Breaznell Battery Clips.

J. H. Breaznell, of Brooklyn, N. Y., manufactures a new type of battery clip that will prove very interesting to boat owners who know the difficulty of keeping a good contact between the dry cells of the ignition apparatus. It is claimed by the maker that these clips will not loosen up owing to the vibration of the motor. They can be applied without removing the thumb nut on the battery. The connectors sell at sixty cents a dozen or thirty cents per half dozen, and can be sent by parcel post C. O. D.

Smile Electric Specialties

Mr. R. S. Mills, of New York, is the maker of many different electric light and power boat specialties, including an attractive line of automatic switch boards and generators. One of his leaders, however, is the Electric Engine-room Telegraph. This apparatus consists of two neat brass indicators, one located in the engine-room and the other on the steersman's platform. By moving the knob of the signal a light is caused to flash on the bridge instrument showing that the system is in working condition, and an electric horn, is sounded in the engine-room. If the indicator is moved on the bridge to any indicated position a light will show in the engine room in the corresponding space. By pressing a conveniently located button the engineer can repeat the desired signal to the bridge showing that he has received, and understood it.

The All-In-One Spark Plug.

The Frontier Specialty Company, of Buffalo, N. Y., is the maker of a spark plug known as the "All-In-One." The plug has the advantage of a petcock screwed into the shell, so that the priming can be placed directly upon the points of the plug. The priming cup is also handy for injecting kerosene to remove the carbon from the engine. It is also possible to find which cylinder is missing by opening the cock. The plug is made in various sizes to fit all engines in both the horizontal and vertical types.

U. S. L. Lighting Outfits.

Storage batteries manufactured by the United States Light and Heating Co., of Niagara Falls, New York, have given excellent service when installed upon motor boats. These batteries are made in voltages from two to ten and amperages of from 30 to 150. These batteries consist of from one to three cells each and are complete ready to install in the boat. The prices of these outfits range from \$3 to \$55. These batteries are contained in white oak cases with dovetailed joints and finished with several coats of acid-proof paint. The plates are contained in the best quality hard rubber jars and are completely sealed up within a wooden case. The battery terminal posts are fitted with strong lead-protected bolt connectors to facilitate connecting and disconnecting the circuit wires.

New E. J. Willis Lights.

The E. J. Willis Company, motor boat supply dealers, of New York City, are making a specialty of a new set of sailing lights for motor boats in class 1, and also two new types of electric light switchboards. The sailing lights are made of a highly polished nickel metal with a three-inch fresnel lens. The lamp has a reflector and patented bulb receptacle for holding the electric light. The switchboards are made in two types, one for use with battery charges or dynamos having cut-outs, and the other for use with magnetos or charges not having any cut-outs. These switchboards enable the user to charge his storage batteries direct from his magneto and draw lights, when needed, from the battery.

Electric Tachometer.

The Electric Tachometer Company, of Philadelphia, manufacture a very ingenious and reliable tachometer for motor boat purposes. The device operates on a new principle as far as tachometers are concerned, as it consists of a small dynamo directly geared to the propeller shaft of the boat. The indicator which can be placed in any convenient location is much similar to an ordinary boat meter. It can be easily seen that, when the speed of the motor increases, the output of the dynamo will be greater and the indicator will consequently register higher. Instead of the pointer indicating the number of volts or amperes it indicates revolutions per minute. The device is very simple and compact and is thoroughly water proof.

Cuno Gas Engine Timers.

This device is designed on the principle of a cylindrical roller under spring tension revolving against steel contacts imbedded in a ring of bone fibre. The hardened steel roller revolves on a hardened steel bushing which is riveted in a U shaped steel carrier arm. An elliptical flat steel spring, riveted to the roll holder, presses the roller outward against the steel contacts. The carrier arm slides over the timer shaft and is held in position by two D shaped holes corresponding to the milled D shaped shaft. The shaft revolves on two ball bearings, one in the case, the other in the cover. The timer is made by the Cuno Engineering Corporation, of 80 So. Vine St., Meriden, Conn.

Gray Hawley Accessories.

The Gray Hawley Mfg. Co., of Detroit, Mich., are calling particular attention to their telescoping flag pole and electric after light. This flag pole is of metal and telescopes into two sections. Surmounting the top of the pole there is an electric light with connections running down through the center of the staff. This obviates the necessity of hanging a lantern on the after staff where there is always danger of its being broken. The company also have been having great success with their whistle outfits which are operated from a tank stored from the engine, the gases being taken from the motor through a special compressor attachment. Hand whistles and fog bells are also made.

Leece Neville Starters.

Yachtsmen, who are familiar with the automobile trade, have often wondered how it is that the majority of high grade automobiles are equipped with self-cranks devices and that motor boats are almost universally started in the old fashioned way. The Leece Neville Co., of Cleveland, Ohio, is one of the pioneers in the manufacture of self-starting devices for motor boats and they state that their outfits have achieved instant success wherever they have been installed.

The same outfit that is used for starting can also be used to light the boat and ignite the engine.

The Sharp Spark Plugs.

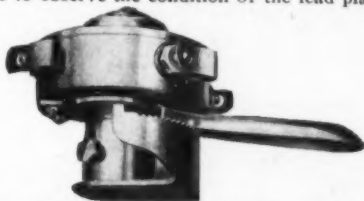
The Sharp Spark Plug Company, of Cleveland, Ohio, manufacture two types of spark plugs for marine purposes. The manufacturers claim that these plugs are self-cleaning, and that they unite the mixture by a flame instead of by a single spark. A feature of their construction is the fact that there is a small combustion chamber above the sparking point which fills with explosive gases, which are shot out in the form of a flame as soon as the spark is passed. They claim that this passage of gas back and forth past the sparking points keeps them clean. Their second type is known as a priming plug and has a priming cup screwed into the shell. A few drops of gasoline placed in the cup will run down directly on the firing points where there is no chance of there not becoming ignited. Both types of plugs are made with either mica or porcelain insulation.

Packard Ignition Cable.

The Packard Electric Company, of Warren, Ohio, are the makers of a line of ignition and lighting wire for motor boat use, and they call special attention to their high-tension cable. This cable is intended specially for motor boat use where the wires are liable to become damp, and it is thoroughly protected with three separate rubber coatings, and finally by two coats of thread. The latter two coats are covered with a flexible enamel which is grease, heat and waterproof. This allows the cable to be bent at sharp angles without cracking the enamel, and allowing water to reach the wire. This firm also manufacture low-tension cable in single and double strands and in any number of strands up to six, for use on six-cylinder engines.

Jewel Storage Batteries.

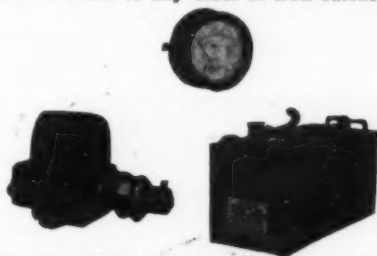
The Jewel Electric Company, of 1469 South Michigan Avenue, Chicago, have just placed on the market a new type of storage battery made in several different sizes. The special feature of these batteries is that they are fitted with a patented "open window" whereby the interior of the cell may be readily seen and examined from the outside. This allows one to observe the condition of the lead plates



A new engine timer made by the Cuno Engineering Corp.



The Handy magnetic trouble lamp which can be stuck to any steel or iron surface.



The Hendricks magneto for motor boat ignition.



The Geiszler non-sulphating ignition storage battery.

and the height of the electrolyte at all times. These batteries are made in the following sizes: 6-60, 6-80, 6-100, and a special 6-100 starting battery. This company also manufactures the Jewel detachable electric row-boat motor, which may be attached to any row-boat or canoe and runs on 2, 6-volt storage batteries.

Brown-Collins Electric Lighting Plants.

The Brown-Collins Gas Engine Company, of Hartford, Conn., build a line of directly connected electric lighting outfits, in addition to their line of marine motors. The electric outfits range from $\frac{3}{4}$ k.w. up to 10 k.w., the dynamos being directly connected with their regular three-port, two-cycle engine. The average voltage of the outfits is 110, and the amperage 13 $\frac{1}{2}$, although the makers will build the machine to any voltage desired. The outfits are very small and compact and take up a floor space of from 26 inches in length and 13 inches in width, upwards. The engines have a bore and stroke of 3 inches, and, on special order, there can be a bilge and air pump attached to run from the engine when the generator is not in use.

The Handy Lamp.

This device is manufactured by the Handy Supply Company, of Cleveland, Ohio. It consists of a small trouble lamp, containing a tungsten bulb around which there is a silver-plated reflector. The body of the lamp, instead of forming the usual handle, is composed of an electro-magnet which is wired in series with the lamp. The lamp will, therefore, stick to any steel or iron part of the boat or engine, and is much handier than the old-fashioned type of lamp with a hook, as it was often difficult to find a place to hook the light.

The lamp will last indefinitely, and the magnet is so strong that there is no danger of its being displaced by vibration, nor will enamel or grease on the engine prevent its sticking. The current that is used up in the magnet is so slight that one of these lamps has operated continuously for 18 hours on a set of four ordinary dry cells.

Henricks Magnetos.

The Henricks Novelty Company, of Indianapolis, are the makers of several different types of magnetos for motor boat ignition. One of their leaders for this year, however, is the motor boat lighting outfit, made in two different sizes, the first having a capacity of from four to six lights, and the second of six to nine lights. The complete outfit consists of one of their Comet Jr. magnetos which may be driven direct by friction from the fly-wheel, or by $\frac{3}{8}$ -inch round or flat belting. The storage battery has a capacity of from 100 to 120 ampere hours, and there is a specially designed voltmeter. These outfits sell for from \$75 to \$85, and make a very attractive outfit for cabin boats.

Geiszler Storage Batteries.

The Geiszler Brothers' Storage Battery Company, of New York City, is the maker of a complete line of storage batteries for marine purposes. Among the virtues claimed for these batteries may be mentioned that there is no harm in leaving the battery discharged for any length of time, no buckling of plates on heavy discharges, no special attention during the winter months, or whenever the battery is not in use, and no sulphation. Geiszler batteries are made in four, six and eight-volt sizes, with a capacity of 40, 60 and 80 ampere hours, and they sell at prices ranging from \$17.50 to \$25.

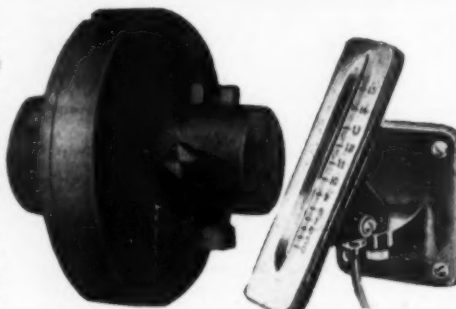
A Real Rotary Engine.

Mr. Frank J. Horton, of 335 Cameron Avenue, Detroit, Mich., is the sole owner and inventor of a new rotary motor which he claims to be the most compact engine in the world, weighing only one pound per horse power. This motor, which will be shortly placed upon the market will be guaranteed to deliver 25 h.p. and will weigh only 25 pounds.

General - Accessories

The Roper Coupling.

This device is built somewhat on the plan of the ordinary flange coupling, except that the two halves are not fastened together by bolts, but are held by brass pins from turning. The idea of the coupling is that when the propeller strikes a log or other obstruction the pin in the coupling will be sheared off, thus saving the wheel from serious damage. To replace a pin is only a matter of a few moments' time. The holes in which the pins fit are bored in four different diameters and at different distances from the center of the hub. In this way it is possible to adjust each coupling to twenty-four different loads. As the couplings are also made in many different sizes it can be seen that practically every size of propeller and size of engine can be accommodated. This device is made by C. F. Roper & Co., Hopedale, Mass.



Roper safety coupling.

Roper speed indicator.

The McKinnon Boat Seat.

The McKinnon Dash Company, of Buffalo, N. Y., are the makers of a line of folding seats for use on motor boats. The seats are made of a round steel frame, brass-plated or japanned and trimmed in either brown duck or artificial leather with the back and seat padded. This seat is made in several different sizes, so that it is desirable for use on all types of motor boats. When folded, the entire chair can be put in a locker or any small space, and, in fact, seven or eight of them can be stored away in the space occupied by a couple of the ordinary type of chairs.

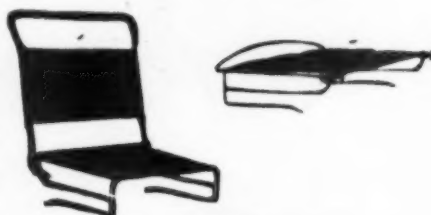
The framework is rust-proof, and there are no springs, screws or bolts to cause trouble, all the construction being of the simplest and strongest kind. These chairs run in price from \$1.50 up to \$3.25 and are becoming very popular among boatmen.



Demonstrating model for Valspar.



"Leak-Proof" piston ring.



McKinnon folding boat seat.

New Economic Motor.

Mr. J. H. Mallinson, 7 Cumberland Street, Rochester, N. Y., has recently put on the market a new 2-cylinder, 3-port, 6-h.p. motor, which he calls "The New Economic Motor." It is supplied with full equipment, coil, battery, switch, grease cup, carbureter, etc. Besides the 6-h.p. size, this motor is made in a one-cylinder, three-horsepower model, one-cylinder, seven-horsepower size, and a two-cylinder, 14-horsepower motor. The latter with a lifetime guarantee sells for \$140 complete.

"Polaris" Compasses.

A complete line of compasses and binnacles, arranged for either oil or electric lighting, is made by the Marine Compass Company, of Bryantville, Mass. Their specialty is the "Perfect" electric compass light. This light consists of a small tungsten light fitted in the bottom of the compass bowl and underneath the card. The light shines up through the card and, consequently is so subdued that there is no eye strain, such as there is when the ordinary light is installed above the card and shines down upon the white surface. The compass is also provided with a cover, which has a small section removed so that the steersman is not mixed up by looking at the entire card, as only the point that is needed comes into view. A flexible cord connects the lamp with the source of electrical energy, which can either be a set of two ordinary dry batteries or the regular electric outfit of the boat. The wires leading to the lamp are twisted so that the current has no effect upon the needle.

Valspar Products.

Valentine & Co., of New York, are the manufacturers of the well known Valspar varnishes and paints for marine service. Probably their best known product is Valspar varnish, which has been known for years by the motor boat trade as the "varnish that won't turn white." Visitors to the various motor boat shows will

remember the Valspar exhibit, where the company have had the model submarine boat in a tank of water. The boat has been varnished with Valspar and also several other varnishes. The parts of the model that have been covered with Valspar have remained in perfect condition, while the other parts have turned white. Valspar bronze and aluminum paints are also well known, together with this company's yacht white and yacht black. Valspar enamels come in five colors, as well as black and white, and are used by the trade on engine cylinders and other metal and wooden parts where a high-grade enamel is desirable.

Leak-Proof Piston Rings.

McQuay Norris Manufacturing Company manufacture a line of patented piston rings for which they claim a great improvement over the old-fashioned type of ring. The rings consist of two sections, one fitting within the other. The opening in each section being closed by the flange of the opposite section, there is, consequently, no opportunity for any compression to leak past the ring. The rings are made of a special quality of gray iron, which is wonderfully elastic and smooth. Their cost is very little more than that of the ordinary type of ring, and, owing to the fact that the iron from which they are made is softer than that used for cylinder castings, there is never any danger of a ring wearing the cylinder.

Sails, Cushions and Supplies.

The Marine Supply Department, of the J. C. Goss Company, Detroit, Mich., are well known as sail makers, as they have been in the business for 32 years. In addition to their sails, they make boat awnings, spray hoods, boat cushions, yacht fenders, life-preservers, and so forth. They also carry a line of marine hardware for both sailing and motor yachts.

Hopkins Supplies.

The John C. Hopkins Co., of New York, have for many years been in the motor boat supply business and have consequently the experience and ability that has to accompany this line. They carry complete lines of deck fittings, ropes, sails, etc. One of the leaders they have had for many years is a line of dory type yacht tenders in various lengths. These tenders have been carried in stock ready for immediate delivery. They have also carried a larger boat than the tenders ready for the installation of a suitable motor.

Acme Cushions and Pillows.

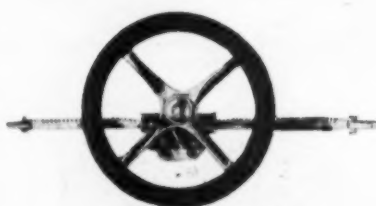
This line of marine cushions and mattresses is made by the Pneumatic Mfg. Co., of Brooklyn, N. Y., and includes air mattresses and cushions in various sizes to which life lines are attached and which can also be used as life preservers in case of necessity. They also manufacture cushions covered with various materials and stuffed with imported kapok which they guarantee will be passed by the United States Government Inspectors on pleasure boats. These latter cushions can be covered with artificial leather, corduroy, plush or brown duck. Their prices range from 75 cents to \$1.60 per square foot.

Q. & E. Varnishes.

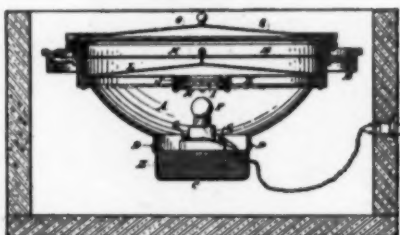
These varnishes and enamels are made by the Murphy Varnish Co., of Newark, N. J., and include a line of interior and exterior varnishes and enamels for motor boat use. They are packed in various sized cans and sold at very attractive prices by dealers in marine supplies and paints.



Goss rope fender.



B. & B. steering outfit.



Polaris electrically lighted binnacle.



Goerz Binoculars.

The Neo Binocular, manufactured by the Goerz American Optical Company, of New York, is a small compact glass admirably adapted for use on boats. It has a simultaneous focusing adjustment, and one of its eye-pieces permits separate adjustment to compensate for any difference that may exist in the eyes of the users. The binocular is made in three different sizes, having a magnifying power of 6, 8 and 12 times, and weighs from 12 to 17 ounces.

Star Brand Hardware.

The August Buermann Mfg. Co., of Newark, N. J., are the manufacturers of a very complete line of marine hardware, including propeller wheels, cleats, chocks, flagpole sockets, deck plates, port lights, steering wheels, binnacles and in fact every kind of motor boat fitting that can be made out of either brass or bronze. The firm's specialty, however, is a line of propellers from ten to twenty inches in diameter, and in either two or three-blade types with three standard pitches. The wheels are made in either right or left-hand types.

Sands New Accessories.

The A. B. Sands & Son Company, 22-24 Vesey Street, New York City, have just brought out a new marine toilet for use with commercial or work boats. This fixture will be known as the "Commercial." It is heavy and well made throughout, will stand rough usage, and the price is very reasonable. The fixture is to be used above the waterline only, and is so arranged that it can replace foreign type of fixtures and fit the piping.

Another important part of the boat's equipment which this company have perfected recently is an air port made in various sizes up to sixteen inches, with and without storm shutters, arranged to care for the sweating often occurring on steel hulls. This port light is known as the "G. O." Air Port.

The A. B. Sands & Son Co., have also perfected a port light soon to be put on the market, having a screen made integral with the port light, which will be made in various sizes up to fifteen inches.

Any of our readers that are interested in any of the above, or, in fact, in any of Sands' complete line would do well to write this concern.

The Jordan "Neversink" Mooring Buoy.

This mooring buoy is made by the Jordan Brothers' Lumber Company, of Norfolk, Va., and is intended to take the place of the ordinary cork or can buoy which is so often used. One of the greatest advantages of this buoy is the fact that it stands well out of the water and can be easily picked up when you are bringing your boat up to her mooring. In fact, the larger sizes of the buoys stand out of the water five or six feet and the tops of them are, consequently, on the level of the forward deck of a raised-deck cruiser, and there is no necessity for any reaching overboard with a boathook. These buoys are made from a special type of red cedar, which is guaranteed not to waterlog. These buoys have strong rings on both the top and bottom and the upper end is wound with heavy cord to keep the ends from splitting off and chipping.

Miller Specialties.

Charles E. Miller with stores in various cities throughout the United States, and a home office in New York, wishes to call attention to several of his leaders for 1914. Among them might be mentioned the Miller Special Fog Bell. This bell is made in two different diameters of 6 and 8 inches. They sell for \$1.20 and \$2.20. The Miller Launch Whistles are of the pump cylinder type and are made in six different sizes, selling at prices ranging from \$3.50 to \$7. The Miller motor boat clock is a small neat timepiece, designed to be screwed to the bulkhead. It has an eight-day movement, and sells for \$5. Miller's Pan-American Lubricants are too well known to need any extended description. They consist of a line of high-grade oils and greases for boat and auto use.



The Goerz Neo binocular.



The W. C. auto boat steerer.



Sands corner lavatory.



Gwilliam thrust bearings.



The Sands folding lavatory.



The Sands new "Commercial" toilet for work-boats.



The W. C. Auto Boat Steerer.

Wilcox, Crittenden & Co., of Middletown, Conn., are the makers of a complete line of motor boat hardware and fittings, but among their leaders they mention the W. C. Auto Boat Steerer. This wheel is made in two types. The first is composed of the regulation automobile wheel with the spark and throttle controls in the center of the wheel. The steering is effected by means of a rack and pinion. All parts of the steerer are made of a heavy quality of either brass or bronze, and there are no parts to rust or get out of order. One of the chief points of superiority is the fact that the post is held by two bearings, one on either side of the point of strain. This prevents any binding of the post. The second type is identical with the first, except that with the rack and pinion the steering cable is wound upon a drum. This drum has a dividing rim or partition, which provides a separate place for each part of the tiller rope, and there is no chance for the rope to ride up on an adjacent coil and bind. A special clamp to hold the center of the rope is provided. Both these wheels are made with 17-inch diameter rim, and length of post up to 24 inches, and they sell for \$25.

The Cavito Underwater Exhaust.

This device is manufactured by the Cavito Underwater Exhaust Company, of Grand Rapids, Mich., and it is claimed that there is no back pressure formed, and that the noise of the exhaust is entirely muffled. The device is very easily installed, as all that is necessary is the cutting of one hole through the planking and the bottom of your boat, and then coupling up in the usual manner, letting the exhaust pass through an expansion chamber before reaching the underwater outlet. The attachment comes in either iron or bronze in all sizes, from one inch upwards, and sells for from \$2.25 upwards.

The Kainer Ropeless Steerers.

Kainer Manufacturing Company, of Chicago, Ill., make a new steering apparatus for motor boats which requires no ropes or pulleys. The apparatus consists of the ordinary automobile type wheel with controls in the center. At the lower end of the post there is a bevel gear, which transmits the movement at a right angle to a short piece of shafting having a universal joint on the end. This is connected to a long shaft which passes beneath the floor of the boat, where there is another universal joint and worm gear on the rudder post. There is no lost motion, and the company claim that their device costs less in the end than the ordinary type of wheel with ropes. The wheels are made in both vertical and oblique types.

Jeffery's Marine Glue.

This preparation is manufactured by L. W. Ferdinand & Co., Boston, Mass., and is for sale by all yacht supply dealers and many sporting goods stores. The glue is used particularly in place of white lead, when applying canvas to the deck of a boat. The glue is absolutely waterproof, and also has a great deal more sticking power than white lead. Furthermore, it does not rot the canvas the way the oil in white lead does. The second use of this glue is for filling the seams of decks. When deck seams are filled with putty, the putty dries and cracks out of the seam, owing to the action of the sun and dampness contracting and swelling the planking. Jeffery's Glue always remains soft and can come and go with the planking without cracking or falling out. There is a special canoe glue made by the company which is intended to be used for making repairs to the canvas covering of the canoes, or in fact anywhere that canvas is attached to wood, as a patch can be attached with this glue so as to be perfectly watertight and last practically indefinitely.

Universal Life Preservers.

The Universal Safety Mattress Company, Inc., of Baltimore, Md., is the manufacturer of a line of life preservers specially intended for use on motor boats. The preservers are made of a heavy khaki cover and are filled with kapok, and are, approximately, 20% smaller and lighter than the standard cork life jacket. The preservers are intended to be fastened around the neck and under the arms and, consequently, keep the user's head well above water. One of the advantages claimed for them over the cork jacket is that in case of a fire at sea the universal preservers burn very slowly with a very thick, black smoke, which would serve to call attention to the difficulty the boat was in.

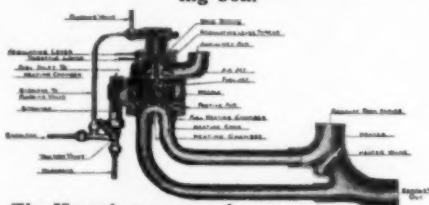


The Universal life preserver which is designed to keep the head above water.

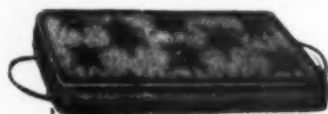
The Knox Kerosene Carbureter.

The Camden Anchor-Rockland Machine Company, Camden, Me., is the manufacturer of a new Knox kerosene carbureter, which is a development of the device which they brought out three years ago. The fuel is introduced into the carbureter in the usual way, but in the base of the device there is a conical-shaped heating chamber. The heat is taken from the exhaust pipe and the amount regulated by a damper. Owing to the fact that the fuel heating chamber is only sufficiently large to allow the fuel to flow over the cone, and also to the fact that the cone is made of soft sheet copper and has a very large heating surface, there is no difficulty in gassifying the fuel. The device is designed so that either gasoline or kerosene can be used, and it is usual to start the motor for a period of from 15 seconds to three minutes on gasoline, and then switch to kerosene.

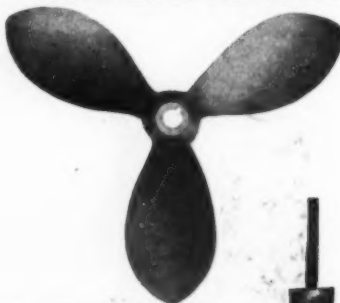
Mechanical Devices Co. self-aligning stuffing box.



The Knox kerosene carbureter.



A neat Masten boat cushion.



The Shaw centripetal propeller.

Masten Company Boat Tops.

The Theo. H. Masten Co., of New York, make a line of boat tops, spray hoods, boat cushions, etc. The framework for the auto tops is of selected white oak with brass fixtures, and the top itself is of a high-grade waterproof cloth, while the side curtains are of heavy khaki. The side curtains are well lighted by celluloid windows. In order to enter the boat it is necessary to have some part of the top quickly fold up, and in the case of the Masten top the entire rear section slides forward without the necessity of opening a lot of catches, as the guy ropes are held by patented brass clutches which grip or release the ropes as desired. The spray hoods are made of special waterproof khaki, and are mounted on heavy brass tubing.

Neversink Life Saving Coats.

The American Life Saving Garment Company, of Boston, Mass., manufacture a line of garments that are designed to be used instead of the usual rather clumsy life jacket. These garments are made in either sleeveless or regular models, for men, women or children. They are made in all the regular sizes of chest measurements, or they can be made to order if desired for a small additional charge. The garments are made of either khaki or blue serge in both Norfolk and ordinary patterns, and are intended to be used as a regular garment when boating. They are lined with a soft fibrous material that has four times the buoyancy of cork and only a fraction of its weight. In fact, the Neversink coat weighs about 24 ounces, while the ordinary life preserver weighs about 7 pounds.

Reliance Motors.

The Nicholds Company, of No. 430 Grand River Avenue, Detroit, Mich., are still selling Reliance motors at about one-fifth their former price. These are of the three and four cylinder models and are of the valveless, two cycle type, having a bore of 5 1/4 inches, and a stroke of 5 inches. The four cylinder model rates at 38 to 60 horse power, and the three cylinder model 26 to 45 horse power, at a speed of from 800 to 1,200 r.p.m.

A sleeveless Neversink life jacket.



Samson rope.



Henke's Bronze.

The Henke Mfg. Co., of New York City, is the manufacturer of a marine bottom paint known as "Henke's Marine Bronze." This paint is put up in patent retainers which have two parts. In one part of the container is the bronze powder and the other is the liquid. This insures the paint always being in good condition, as only enough need be used for immediate use. It is claimed that this paint contains no banana oil and that a boat painted with it will be as smooth at the end of the season as it was at the beginning, no matter how foul the waters are in which the boat is kept. The paint will dry almost instantly and should be put over a priming coat first.

The Shaw Centripetal Propeller.

The Shaw Propeller Company, of Boston, Mass., manufacture a line of patented propellers for high and semi-speed boats. The company claim that the use of their propeller will effect a considerable gain in speed, owing to the nature of their improvement. The company state that the propellers are made of the best quality manganese bronze with a tensile strength of 83,400 pounds. This allows the use of very thin blades and reduces the amount of power necessary to turn the wheel. The Shaw wheel has a driving surface which is part of a cone developed in a certain manner, and the principle result of its action is to prevent any centrifugal tendency of the water particles, thus getting a straight reaction in the direction of travel.

Mechanical Devices Specialties.

The Mechanical Devices Co., of Watervliet, N. Y., who are the makers of the well-known line of automatic aligning stuffing boxes, shaft logs, struts, etc., have found that their line is so complete that there is no necessity of adding to it for next season. One of their most interesting devices is their combination shaft-log intended for boats having plank keels. All boat builders know the difficulty of constructing a shaft log so that it will be perfectly watertight and at the same time not bind the shaft. The device made by this company is a casting intended to be placed on either the inside or outside of the boat and having the stuffing box carried on a ball and socket joint. This joint allows for considerable movement of the shaft and even if the engine is somewhat out of line or the boat has twisted in any way the shaft will not bind, nor will the stuffing box leak. This stuffing box is also furnished without the shaft log, so that it can be screwed to any ordinary keel. Double and single struts are also made with this improvement, as well as flexible pipe joints for exhaust piping.

Gwilliam Thrust Bearings.

The use of a thrust bearing between the propeller and the engine is a necessity even on small motors and the Gwilliam Co. of New York make a specialty of these bearings. They are made in a variety of sizes so as to be suitable for all types and sizes of motors, and they are also made in various models, both grooved and plain. The company claim the balls with which these bearings are equipped are of the highest grade steel, and the ball containers and thrust rings out of the best material for the purpose. Both foreign and domestic goods are handled by this company.

Samson Tiller Rope.

Samson tiller rope is manufactured by the Samson Cordage Works, of Boston, Mass. It is waterproofed, solid braided, cotton cord, mahogany color, with a wire cable center. Samson tiller rope is made with either a galvanized crucible steel or a phosphor bronze wire center. The bronze center is the best adapted for use on the salt water. This cord is made in various sizes so that it is suitable for all classes of motor boats and yachts, and the makers guarantee that it is full size and that there are no lengths having scant measurement.

The Francke Flexible Coupling.

The Smith Serrell Co., Incorporated, of New York City, are the general selling agents for the Francke Co., makers of the Francke motor boat coupling. This coupling is designed to be used in place of the ordinary flange coupling connecting the engine to the propeller shaft, but unlike the ordinary coupling, there is no necessity of any special care being taken to have the engine alignment perfect, as this coupling has a universal feature so that flexibility in the shaft is taken care of and at the same time there is no necessity of an extra thrust bearing such as has to be used with the ordinary type of universal joint.

Monarch Gas Engine Specialties.

The Monarch Valve Co., of Brooklyn, N. Y., are the makers of the well known Monarch carbureter, which will be made for the coming season in almost exactly the same model as has been found satisfactory in the past. The Monarch special carbureter has a special type of air valve which allows much greater ease in starting and obviates the necessity of priming the engine. The firm also make vaporizers or mixing valves, check valves, and auxiliary air valves for increasing the power of two-cycle motors, particularly when used on engines of the three-port type. Other features of their line include an outboard water connection consisting of scoop and strainer, a number of different sizes of stern bearings and stuffing boxes, a rotary power bilge pump, and a flexible hose connection permitting hot air to be led to the carbureter from the exhaust pipe. Spark coils are also handled.

Thermex Muffler.

This device is made by the Thermex Silencer Works, of East Boston, Mass. It consists of a large, hollow iron ball into which the exhaust is piped, so that it will whirl around the inside of the silencer and escape through the center where there is an adjustable exhaust opening. The cooling water is led into the top, is carried around by the exhaust gases, cooling them as it goes and the balance is finally led off by a drain pipe in the bottom. The company claims that their muffler produces absolutely no back pressure; that the revolutions of the engine are increased; that no water can flow back into the cylinders; that no salt will be deposited on the inside, and that the muffler will never wear out or break down.

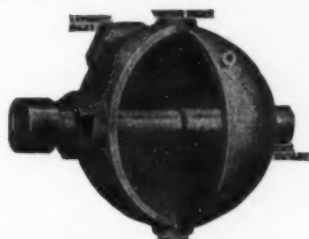
Juwel Oil-Gas Stoves.

Juwel Oil-Gas Stoves are manufactured by the Globe Gas Light Company, of Boston. These stoves burn ordinary kerosene oil, but have the advantage that instead of burning the oil through a wick they change the kerosene into a gas which burns smoothly and quietly with a flame very much hotter than that given by the ordinary kerosene stove. All parts are made very strongly, and are not liable to get out of order.

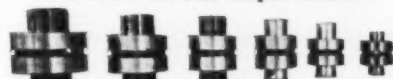
The latest model of the Juwel is a one, two or three-burner stove with a rail around the top, so that dishes do not fall off during a heavy sea, and fitted so that the burner part and oil font are hung on swinging brackets, so that they can be easily swung out for filling or cleaning.

Lobee Pumps.

During the past year many of the fastest boats of the country, both racing boats and cruisers, have been equipped with motors using Lobee circulating and bilge pumps, manufactured by Lobee Pump & Machinery Company, of 57 West Bridge Street, Buffalo, N. Y. These pumps are known the world over as efficient, simple and durable, and as they have stood the test for fourteen years, their reliability cannot be doubted. Such well known boats as Kitty Hawk V, Oregon Kid, Disturber III, Peter Pan V and others were equipped with pumps of this make.



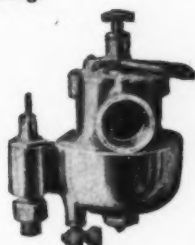
The Thermex ball shaped muffler.



Various sizes of the Francke flexible coupling.



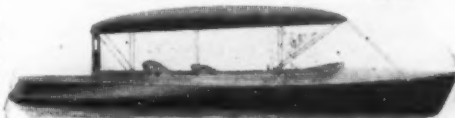
The Monarch auxiliary air valve.



The Krice carbureter.



The ingenious Townsend grease gun.



A Kenyon motor boat top.



The Coolidge high-speed propeller.



The efficient Juwel stove.



Reid Propeller Wheels.

The Reid Wheel Company, of Newark, N. J., manufacture a line of propeller wheels, for which they claim many advantages. One of the chief of these claimed is that the wheels are all true screw. The wheel is made in two different styles. In the first style the width of the blades is 28 per cent. of the diameter, and the blades are inclined aft at an angle of 7 degrees. The second style has the blades inclined at 7 degrees, but the width is 32 per cent. of the diameter.

The Krice Carbureter.

This carbureter, which is manufactured by the Krice Carbureter Co., of Detroit, Mich., has been on the market for many seasons. It differs chiefly from the average run of carbureters in that it has no needle valve, as the gasoline is sucked into the mixing chamber through an annular opening or slot, the object of this being that the gasoline will be drawn up on the sides of the mixing chamber by capillary attraction, thus spreading over a large amount of surface. The company state that by this method the gas is vaporized very quickly into a much dryer form than when the ordinary needle valve is used.

Kenyon Tops and Cushions.

A very complete line of motor boat tops and cushions is manufactured by the R. L. Kenyon Co., of Waukesha, Wis. These people have been making a specialty of this class of work for many years and have found their line so universally satisfactory that they have made no radical changes for this year. Their line of boat tops is very well known, but they are perhaps better known by their cushions and pillows which are of the life-saving type. These cushions are stuffed with imported kapok and covered with various materials to suit the purchaser. They are exceptionally soft and comfortable. In addition they can be used as life-preservers in case of necessity and the company state that their pillows have been passed by the United States Inspection Service as being satisfactory.

Coolidge Propellers.

The L. H. Coolidge Co., of Seattle, Wash., is the maker of all types of propeller wheels ranging in size from wheels for yacht tenders and small launches up to wheels for the largest sized motor yachts. The firm has had very great success during the past season with their high speed wheels installed upon hydroplanes. Many of the fastest boats in the West have been equipped with Coolidge wheels and have conclusively shown that the Coolidge Co. make a very fast and well balanced wheel.

Oshkosh Supplies.

The very complete line of motor boat supplies carried by the Oshkosh Metal Products Co., of Oshkosh, Wis., will be continued for the 1914 season and the company has also added many new specialties and in general are on a much better basis for attending to the wants of their customers.

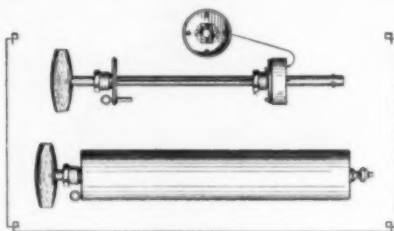
Curtiss Marine Plumbing.

The J. H. Curtiss Company, of New York City, manufacture an exceptionally complete line of marine plumbing specialties. The Curtiss line includes 15 different marine toilets, several folding wash-basins, in both the wood and porcelain types, polished brass or nickel-plated, which are especially designed for use in small boats, as they fold up into a space which only stands out four or five inches from the bulkhead. They also make non-folding wash-basins for use on larger boats, as well as bathtubs. Among their leaders can be mentioned their basin and galley pumps, for the purpose of filling wash-basins and galley sink. These pumps are made in various styles, so that they can be installed in any desired position.

Parts and Accessories.

Esco Specialties.

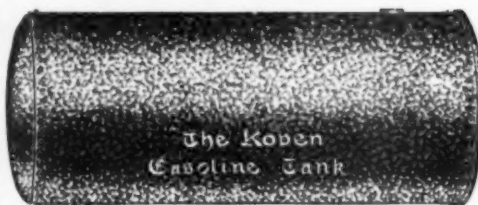
The Emmons Specialty Company, of Detroit, Mich., are the manufacturers of a complete line of motor boat supplies and equipment. One of their specialties, which is mentioned in their new accessory catalog, is the Esco Fire Extinguisher. This device is small and neat, and is specially intended for use on boats where the danger of a fire from gasoline is always present. The device is exceptionally simple, and all that is necessary to operate is to pull out a handle, open a small valve and pump. All parts of the extinguisher are made of brass, except the handle which is of wood, and the gasket on the plunger which is of leather, and it is claimed that the gun will last a life time without a particle of attention. A heavy coat of finishing material preserves the high polish against the action of salt water or salt air.



Esco fire extinguisher.



Ejector muffler.



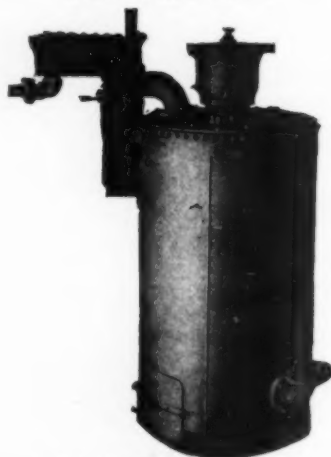
Koven gasoline tank.

Galusha Gas Producers.

These outfits are manufactured by A. L. Galusha & Co., of Dorchester Centre, Mass., and are chiefly intended for use on commercial boats where the cost of gasoline is prohibitive. These producers have been on the market since 1907 and are in use upon many of our large commercial vessels, and also vessels throughout the world. The company claims that their producer will operate so that the saving effected will be the same as if fuel sold for 2c a gallon. They also claim that their producer is very much cheaper than a commercial steam plant. The gas producers weigh about one-quarter as much as the ordinary type of marine boiler and occupy about one-third the space. They claim that with their producer, gas can be generated in 20 minutes from the time the fire is started burning and, owing to the patented system which they use, the engine can be run on gasoline or kerosene until the producer starts to generate.

The Troike Muffler.

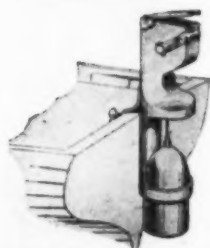
This muffler which is made by the Troike Muffler and Mfg. Co., of Lorain, Ohio, in all sizes suitable for marine engines is constructed of pure American ingot iron. The makers claim that the muffler is so designed and built that there are no nuts or bolts to work loose and rattle and no gaskets to burn out and cause leaks. They claim that their muffler is so designed that there is absolutely no back pressure, but in fact a visible increase in power, as a vacuum is formed in the muffler as soon as one explosion passes through it. This muffler is supplied in all different sizes of standard pipe thread.



Galusha gas producer.



Troike muffler.



Minneapolis safety anchor.

Morss Company Specialties.

A very complete line of motor boat and yacht supplies is carried by the A. S. Morss Co., of Boston. These supplies include deck fittings, steering wheels, binnacles, compasses, deck plates, port lights, and in fact everything for the man building or fitting out a boat, including building tools, and all varieties of fastenings, etc. There is also a department handling ropes, sails, spray hoods, and all other canvas goods.



Ejector Mufflers.

These mufflers are made by the Motor and Manufacturing Works Company, of Dunkirk, N. Y. They consist of a cylinder closed on the ends, with heads into which the intake pipe and outlet pipe are screwed. The baffle plates are of conical form, and through the apex of the cones is passed a pipe of varying diameter. The conical baffle plates divide the muffler into three large chambers and a number of smaller chambers, varying from three to five, according to the type of engine upon which they are to be used. It is claimed by the manufacturers that the high velocity gas leaving the engine at a speed between four and five times the speed of the piston, flows through the center pipe and nozzle, which forms the termination of the center pipe. The high velocity gas issuing from the nozzle creates a suction at the outlet end of the muffler, thus making the muffler automatically self-adjusting to the varying speeds of the motor.

"Koven" Gasoline Tanks.

L. O. Koven & Brother, of New York City, manufacture a complete line of gasoline and air tanks, muffler tanks, and rudders for use on motor boats. All the tanks are made of the best quality open-hearth steel, thoroughly galvanized both inside and out, after being riveted with very heavy fastenings. The gasoline tanks are made in sizes having capacities for from 4½ to 250 gallons. They can also be made to order, having any capacity. Their rudders are made of heavy galvanized steel to the order of the purchaser. One of the chief features claimed for the gasoline tanks is that they are thoroughly cleaned on the inside and there is no danger of parts of the galvanizing becoming detached and stopping the flow of gasoline.

Fogg Upholstery.

As a specialist in marine upholstery, M. W. Fogg, of New York, has been in business for the last fifty years, and during that time has had charge of the interior furnishing of some of the best-known yachts and steamers in our waters. Mr. Fogg personally attends to all the work, and, consequently, many yachtmen let him have entire charge of the upholstery work, not even making suggestions as to what color the cushions should be. Mr. Fogg also handles wicker furniture, mattresses, springs and other interior furnishings and decorations for yachts.

Marine Clocks.

The Chelsea Clock Co., of Boston, Mass., make a specialty of a line of clocks for motor boats and yachts. These clocks are all of very high grade material and workmanship and are designed to properly fulfill the very exacting service that a clock gets on a motor boat. The cases are dust and waterproof, and it is claimed that the vibration will not hurt the clocks or interfere with their time-keeping qualities. These clocks are all of the eight-day type and some have indicators showing exactly whether the clock needs winding or not. The clocks are also made in models that make them very suitable for either regatta prizes or clubhouse clocks.

Monarch Varnishes.

Chas. H. Gillespie and Sons make a specialty of paints, varnishes and paint and varnish removers for marine use. Their leader is Monarch Spar Varnish, a high-grade product intended for the outside finishing of motor boats and yachts. Its lasting qualities under hard usage are well known. Monolac is an interior varnish for cabins that has been used on many of the best known boats in the country with great success. A paint and varnish remover that will be interesting to the man who wishes to re-paint or varnish his boat in the spring time is known as Bull Dog Remover. It is claimed that this remover will not injure the hands of the user, and that it acts almost instantly. The remover is in paste form and will remove old white lead, zinc paint, shellac or enamel. A booklet on painting and varnishing yachts and motor boats will be sent upon request by the company.

Parts and Accessories.

Nicholson "Coil" Files.

The Nicholson File Company, of Providence, R. I., make an especially designed file for cleaning and brightening the contact points on spark plugs and vibrators. They claim that the regular use of their file will add greatly to the power delivered by the engine, and that a set of these files will more than pay for itself in a short time. These files are made complete with a convenient handle, and sell for \$1.50 a dozen.

Osgood Oilers.

The J. L. Osgood Lubricator Company, of Buffalo, N. Y., make numerous models of gasoline engine lubricators. All models are of the mechanical type, being driven by belt, gear or ratchet. The oilers are made with any number of feeds, from one up to twenty, and in all tank capacities, from 4 pints to 14 pints. Sizes larger than these can be made on special order. The tanks are finished in polished brass, nickel, oxydized copper or plain steel tank painted. The regulation of the amount of oil feed to any bearing is very simple. All that is necessary is to turn a thumb-screw in the direction indicated by an arrow stamped on the head of the screw. For use at night the company provide an illuminating hood containing a small electric light which lights up the feeds so that you can always tell whether your engine is getting the proper supply of oil.

Chas. Durkee's Specialties.

Charles D. Durkee & Co., of New York City, are still handling their large line of motor boat supplies, but for the season of 1914 they wish to call attention to the following specialties:

The Robbins Universal Strut is intended to be used to support the propeller shaft on motor boats, but instead of being a rigid bearing, the lower box is hung so that the strut can be swung to take care of any angle that the shaft may form with the keel. The strut is made with both single and double arms.

The Reliable Chemical Extinguisher is specially designed for motor boat use, and is guaranteed by the makers to put out all fires from gasoline, oils or varnishes. They also claim that it will not freeze and the contents are not injured by time. The Extinguisher is made in three different sizes, selling from \$6 to \$10.

The Orswell Ignition Plug is a very ingenious device, combining spark plug and spark coil. The vibrator is detachable, and the coil is, consequently, useful aboard boats having make-and-break engines. The complete outfit for jump spark engines costs \$9, or the plugs alone \$5. Even on engines of more than one cylinder it is only necessary to have one vibrator.

B. T. K. Parts.

Many boats of the high-speed type are being built with regular transmission gears and foot-operating clutch, in exactly the same manner that automobiles are built, as builders have found that in case of heavy seas or congested waterways, it is desirable to have some means of slowing the boat down without throttling the engine to such a point that there is danger of its stopping. A complete line of transmissions and both cone and disk clutches is made by the Auto Parts Manufacturing Company, of Muncie, Ind. This company also manufactures a line of universal joints and control levers.

Crockett's Varnish Specialties.

A line of varnishes, fillers and other finishing preparations is manufactured and sold by the David B. Crockett Co., of Bridgeport, Conn., especially for marine use. Besides the inside and outside spar varnish that they make, they have what they call a one-coat finish, which is slightly cheaper than the regular spar composition, and owing to its quick-drying properties, it is very useful for touching up the little scratches and bruises which constantly occur aboard a boat. A waterproof floor finish for the interior floors of yachts is also made.



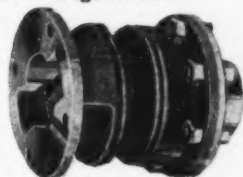
Peterboro Canoe Co.'s steering equipment.



Osgood oiler.



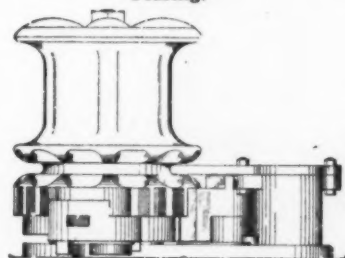
"Reliable" fire extinguisher.



Coupling manufactured by the Auto Parts Co.



Durkee combination rudder and shaft bearing.



Durkee's Andrade automatic windlass.



New Departure Ball Bearings.

The New Departure Mfg. Co., of Bristol, Conn., are the manufacturers of ball bearings for use in motor boats and automobiles. The line consists of three types, known as the "double-row," the "single-row" and the "radax Type." The double row type is a combined radial and thrust bearing having two rows of balls and sustaining loads from any angle. The single-row type is a strictly radial bearing having one row of balls and only taking a slight thrust. The radax type has only a single row of balls, but it is so made that it will take both the radial load and a thrust load in one direction.

Trimount Accessories.

The Trimount Rotary Power Co., of Boston, Mass., have long manufactured a line of bilge pumps and whistle outfits for motor boat use. One of their most popular appliances is a rotary bilge hand pump. This little device will lift water 25 feet and will develop 30 pound pressure when used with a nozzle. This appliance takes up very little room, as it can be mounted flat against the bulkhead and, owing to the fact that it is manufactured entirely of bronze, it is very nearly indestructible. These pumps are made in three sizes, having a capacity of from 6 to 20 gallons per minute at 85 r.p.m. They are sold for from \$12 to \$30 apiece.

Universal Supplies.

The Universal Motor Boat Supply Co., of Atlantic Highlands, N. J., are the distributors of a very complete line of motor boat supplies, including deck fittings, steering gears, engine accessories, bilge pumps, etc. Among their specialties should be mentioned the Pyke automatic boat drainer, a device that operates on the suction principle with a scoop arranged on the underside of the boat with the opening aft, so that when the boat moves forward there will be a suction created in the scoop which will draw the water through a hole in the bottom of the boat out through the scoop. There are check valves fitted to prevent the inrush of water when the boat slows down or stops.

The B.&H. Yacht Cannon.

The Naval Co., of New York City, make a new and interesting cannon for use on motor boats and steam yachts. This new cannon is of bronze and it is made so that the carriage and the gun are separate, so that each can be stored away if necessary. This makes it possible to have several mounts for the cannon on various places aboard and by shifting the gun itself from one carriage to another you can always have it in the position desirable without moving the entire carriage. In fact the B. & H. cannon is designed to have the carriage permanently fastened to the deck, thus obviating the necessity of lashing the carriage in place. The same gun can be mounted on a field carriage for use on the clubhouse lawn. This gun is made in all sizes, from a cannon for a small size cruiser up to the guns used on the revenue service boats.

Hydrex Silencers.

The Hydrex Silent Exhaust Works, of New York, are the makers of an improved exhaust silencer for motor boats. This silencer or muffler operates on the swirling principle, as the cooling water is turned into the silencer at the top and causes the gases to whirl, thus reducing their heat and contracting them. It is claimed by the makers that there is almost no noise noticeable when this device is used, and they also state that the silencer will not cause back pressure, thus reducing the power of the engine and consequently making the consumption of gasoline larger. Circulars fully describing the device in its different sizes and stating prices will be sent upon postal card request to the makers.

Parts and Accessories.

The J. A. G. Steering Device.

James A. Garret, of Auburn, N. Y., makes a very ingenious steering device for motor boats. The device consists of a polished bronze frame with a sliding gear ratcheted upon by a planetary wheel attached to a lever. Its installation is very simple. It is fastened to the coaming in one piece, taking up no perceptible amount of room, by five brass screws that are countersunk behind the moving parts. The tiller rope is attached without cutting, and the device is ready for work. It is made of bronze, carefully finished and polished, making a very neat fixture and strong as the boat is itself. The maker claims that there are no complicated parts, and no mechanism to wear or get out of order. It is practically indestructible and can be fitted to the curve of coaming with little difficulty, and installed in a few minutes.

J. M. Marine Specialties.

The H. W. Johns-Manville Company, of New York, handle a very complete line of motor boat supplies, but among their leaders for the coming year can be mentioned the J. M. Fyro fire extinguisher, and the J. M. (Metzger) Soot-Proof Plug. The former is a handy fire-fighting device that operates very easily. There is no pumping and no turning upside down or tearing off of caps. To operate, all that is necessary is to hold the device in an upright position and open a valve. The contents are in a liquid gas form, and this gas is instantly forced out upon the fire, blanketing it. The Soot-Proof Plug is the well known spark plug that for years was marketed under the name of the Metzger Plug. The makers claim that the plug will not soot up and foul under any conditions met with in service.

Non-Fluid Oils.

The New York and New Jersey Lubricant Company, of New York City, wish to call particular attention to what is known as their "Kejex Can." This can is sold containing a high-grade non-fluid oil, which is used in about the same manner as the ordinary grease that is so well known aboard motor boats. With the Kejex can there is no necessity of filling any grease gun, as the can itself is fitted with a spout and key, so that the grease may be forced out in the desired quantity. The makers state that one turn of the key will force out enough grease to fill the ordinary grease cup. For lubrication where grease is not desirable, the company market several grades of cylinder oil called "Motoroil." This oil is put up in one and five-gallon cans, and can be procured from all motor boat supply houses.

"Providence" Windlasses.

These well known motor boat fixtures manufactured by the American Engineering Co., of Philadelphia, Pa., are made in an almost endless variety, running from steam and electric windlasses intended for use on the largest ocean liners down to little outfits suitable for the smallest size motor boat. Outside of the windlasses and capstans the firm's best drawing card for motor boat trade is the Providence stockless anchor. The firm claims that this anchor combines all the features of a mushroom anchor, with none of the disadvantages, and they also claim that it can never foul. They carry these anchors in stock in all weights from five to three hundred pounds, and can make larger sizes to order. Their



One of the staunch Providence windlasses.

chain stoppers and surge relievers for use on boats anchored in exposed positions, where there is great strain on the anchor cables, are made in all sizes suitable for motor boats and yachts.

Wicker Kraft Furniture.

The Wicker Kraft Co., of Newburgh, N. Y., are the manufacturers of yacht furniture of the wicker type. Among their most attractive articles are their life-preserver chairs. These chairs are made of handsome wicker construction, but have a space under the seat where an ordinary cork life buoy can be stored, thus obviating having the buoys around the deck and under foot and at the same time having them always handy, as in case of accident the entire chair can be thrown overboard, or in case the boat sinks the chair will float off the deck and serve to support one or more people. Another specialty is a new carrying tray designed for carrying food from the galley to the dining saloon or any portion of the boat, and it is particularly useful when meals are served in the cockpit.

Meteor Motor Boat Supplies.

The Narragansett Chemical Co., of Providence, R. I., handle all kinds of motor boat supplies for either large or small boats and yachts. Their line includes deck fittings, steering wheels, flagpole sockets, cleats, hand railings, port lights, and all other brass and iron devices, including windlasses and capstans.

Standard Oil Company's Stations.

During the past season the Standard Oil Co. has established many more stations for the distribution of their gasoline. These stations are distributed over various parts of the rivers and coasts of this country and it has been said that motor boat cruisers are almost always in sight of a Standard Oil distributing station. In addition to the gasoline that this company produce, motor boat men also know the value of their kerosene oil, and engine oils and greases, which have all been on the market for many years.

A. & A. Portable Stoves.

The A. & A. Mfg. Co., of Chicago, make a wickless kerosene gas stove, for use on motor boats and yachts. The stove is compact and non-explosive, and it is stated that it will operate for 1/2 cent an hour. One of the features of the stove is the fact that it will not leak, and it can be stored away in a locker or carried upside down without danger. For those who wish to pack the stove around on a canoe or camping trip the firm provide a neatly partitioned case, which holds the stove and parts, and which only takes up a space 11 inches long, 8 1/2 inches wide and 4 1/4 inches deep.

Wolf's Head Oil.

This well known lubricant is made by the Wolverine Lubricants Co., of New York, and has been on the market for several seasons, during which time it has forced itself into the front rank of gasoline engine oils. The oil is made in a variety of consistencies, ranging



A carrying-tray made by the Wicker Kraft Co.



from a heavy thick oil for large bearings to a very light water-white crystal, for the cylinders of high speed racing engines. The company are very proud of the fact that their oil was used on some of the fastest boats in the country during the past year and they state that in every case where their oil was used properly the engines had no trouble due to carbonization.

Planhard Carbureters.

These devices are manufactured by the Planhard Manufacturing Co., of New York City. The carbureter is made for two and four-cycle motors of either the low or high speed types. It is very simple and only has one adjustment, which is the needle valve controlling the gasoline. The company state that by the use of their device the gasoline consumption of the engine can be cut considerably. In fact, they show a letter from one of their customers, which states that a 20 h.p. medium speed motor was equipped with one of their carbureters and the gasoline consumption reduced exactly one gallon an hour.

Kyanize Spar Varnish.

The Boston Varnish Co., of Everett Station, Boston, Mass., are the makers of the well known Kyanize spar varnish. This varnish has been used in large quantities by the United States Navy. It is claimed that this varnish will not turn white and will retain its luster even though exposed to salt air for a long period. The varnish comes in cans of various sizes, from one pint upward.

Tiebout Specialties.

The W. & J. Tiebout Marine Supply Co. are still making a specialty of motor boat hardware and have two leaders with which they have had a great success during the past season. The first is the Star air pump which consists of a small single cylinder compressor which can be run from the tailshaft direct by the use of a split eccentric and a hinge bearing. The compressor can be switched on or off by a single movement of a lever. This lever can be operated by foot pressure or hand from any part of the boat. Another one of their leaders is a power bilge pump, which is mounted on the floor of the boat and operated by a friction wheel being pressed against the flywheel. This little device has a capacity of five gallons per minute. The price is \$8.

Yacht Fixtures.

The Goblet-Dolan Co., of New York City, are the manufacturers of specialties in marine plumbing. Their line includes toilets, folding and stationary lavatories, galleys, sinks and various fittings and pumps for use in the toilet and galleys of motor boats and yachts. Their toilets are equipped with metal valves, which they claim are far superior to the old-fashioned leather valve. Their toilets range from a simple above-the-water-line fixture to the very pretentious affairs for use in large yachts. The line of bathtubs they carry, with a shower bath attachment connected to a large, easily operated pump, is very complete. They also carry a line of galvanized gasoline and water tanks, holding from 5 to 200 gallons.



The A. & A. wickless non-explosive portable stove.

Parts and Accessories.

Harris Oils and Greases.

The A. W. Harris Oil Company, of Providence, R. I., are manufacturers of gasoline engine oils and greases. Their cylinder oil is made in three different grades—light, medium and heavy—and sold in gallons, 5-gallons, half-barrels and barrels, the gallon cans being packed twelve in a case. The greases can be obtained in tins holding 5, 10, 25 and 50 pounds and in barrels. The company also manufacture metal polish for brass or nickel, which they pack in one-gallon cans.

Carpenter Marine Supplies.

Messrs. Geo. B. Carpenter & Co., Chicago, Ill., manufacturers and distributors of marine hardware and motor boat supplies, have just completed their first full season in their new plant, and report a very large increase in their business, due, largely, to their increased stock and greatly improved facilities for taking care of trade. The first requisite of prompt and accurate filling of orders in so diverse a line as marine hardware is a modern and efficient method of stock keeping. In their new plant they have been able to devote a good deal of attention to this question, and it has brought them splendid results.

The Aaron Automatic Bilge Pump.

This bilge pump, manufactured by the Aaron Automatic Bilge Pump Company, of Providence, R. I., is an automatic bilge bailing device operating from the exhaust water which passes through the device, causing a suction which effectively removes all liquid matter from the bilge of the boat. It will also remove any gasoline vapor that may be under the floor boards. The pump is made in six sizes, from 1/2 inch to 1 1/2 inch and has a capacity of from two to twelve gallons per minute under average working conditions. The prices of these pumps range from \$20 to \$70.

Kingston Carbureters.

This line of carbureters is made by the Byrne Kingston Company, of Kokomo, Ind., and has been on the market for many years. The firm's new model device known as Model Y is especially designed to handle the low-grade fuel that is being furnished at the present time. It is claimed that by the use of this carbureter, carbonization of the cylinder is obviated, and starting is made much easier. These devices have only one adjustment, and the air supply is automatic, being controlled by five ball valves that are opened by the suction of the motor. The company has also placed a new kerosene burning carbureter on the market intended for engines that use kerosene exclusively.

The "Fire Out" Extinguisher.

The "Fire Out" extinguisher is strongly made of polished brass; the liquid it contains

will neither freeze nor deteriorate; it can be placed in any position where there is hazard of fire; and the makers state it is always ready for use without manual operation, as when a fire occurs the location affected is immediately flooded with about 2,000 feet of heavy fire extinguishing gas, sufficient to smother any fire. The device is manufactured by the Inst Lighter Co., Columbus, Ohio.

Star Ball Thrust Bearing.

The Star Ball Retainer Co., of Lancaster, Pa., make a specialty of thrust bearings for marine purposes. These bearings are of the three-ring type with the balls held in one ring and the other two rings serving as bearing surfaces. The two outer rings have a round channel cut in the face in which the balls revolve. All parts of these bearings are made of the best quality material. Further information will be cheerfully sent by the makers.

Edward Smith Spar Coating.

Edward Smith & Co., who have been known as varnish makers for eighty-five years, are the manufacturers of a high-class spar varnish for motor boat use. The makers claim that this varnish is light in color, free-working, elastic, durable and brilliant, and that it will dry sufficiently to be dust free in eight hours. In places where a quick-drying varnish is essential, the Edward Smith Quick Marine Coating is excellent. This coating is adapted to all places where the regular spar coating could be used, but, owing to the fact that it will dry in from three to five hours, and will not turn white, it is particularly adaptable to places that have to stand a lot of rough usage.

The Model "R" Schebler Carbureter.

The Model "R" Schebler carbureter is designed for use on both four and six-cylinder motors. It is a single jet, raised-needle type of carbureter, automatic in action. The air valve controls the lift of the needle, and is designed to proportion automatically the amount of gasoline and air at all speeds. As the speed of the motor increases, the air valve opens, raising the gasoline needle, thus automatically increasing the amount of fuel. There are but two adjustments—the low-speed needle adjustment, which is made by turning the air valve cap, and an adjustment on the air valve spring for changing its tension. The carbureter comes in four sizes: 1 inch, 1 1/4 inch, 1 1/2 inch and 1 3/4 inch. It is made by Wheeler & Schebler, Indianapolis, Ind., in addition to other models.

Hand Nautical Instruments.

The John E. Hand & Sons Co., of Philadelphia, Pa., is the manufacturer of compasses, binnacles, steering-wheels, peloruses, sounding machines and other navigating instruments.

The company's line is so complete that it is impossible to attempt to describe it fully, but the Octa and Caliph steering pedestals and compensating binnacles are specially interesting for motor boat users, owing to the fact that they are designed for use on boats up to 100 feet in length, and are about the smallest size of compensating binnacle to be found. These outfits cost from \$190 upwards, and are invaluable on a boat which goes for long sea voyages, such as the Bermuda or Havana Races. Another motor boat specialty is the Hand Log which sells for \$20, and is a very accurate way of finding the speed and distance traveled by your boat.

Mondex Helix Mixers.

The Aristos Company, of New York, make a very ingenious device to be inserted in the inlet pipe between the carbureter and the inlet valve of the engine. The device is small and compact and can be easily installed without any special machine work being done on the engine. The company claims that the use of its device will effect a very noticeable saving in fuel, and also cause the engine to run more smoothly. The saving of fuel, according to the company's statement is from 25% to 40%.

Marine Models.

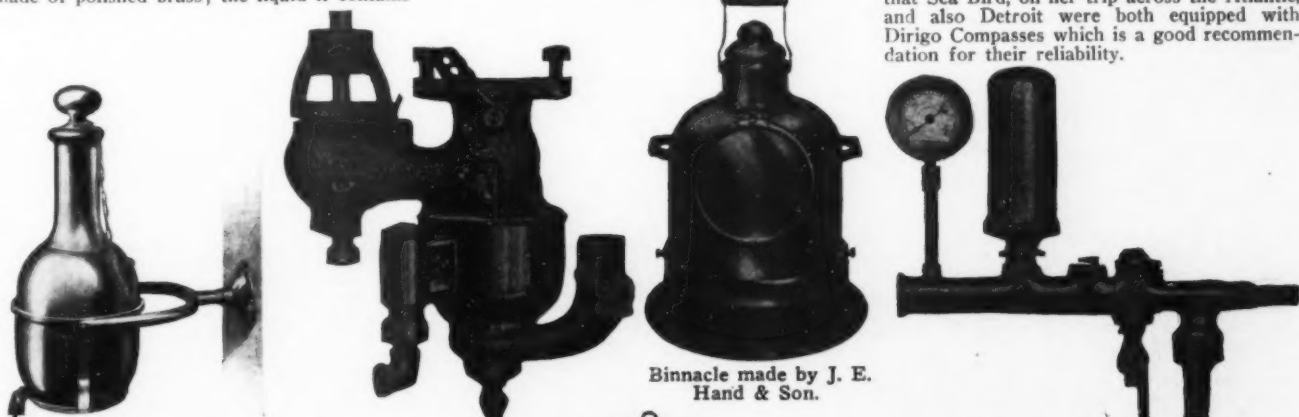
Boat owners are often desirous of obtaining models of their favorite boat. Many yachtsmen, in fact, have models made of every boat they have ever owned, making a very interesting collection in later years. The H. E. Boucher Mfg. Co., of New York, make a specialty of this class of work, as they have been supplying yachtsmen with models for a great many years. Their models are built exactly to scale and are fitted out with all deck fittings and other apparatus exactly like the boat from which they are making the model. The company also builds machine models and special machinery.

Thermos Bottles.

The line of Thermos bottles made by the American Thermos Co., of N. Y., is too well known to need any description, but the company wish to call special attention to their carafe, which has been found a quite necessary part of the equipment of many motor boats. The carafes hold much more than the bottles, and can be mounted on bulkhead or locker, so that they are always handy but at no time in the way or in danger of being broken. With one of these outfits aboard your boat you can always be sure of having either ice cold or piping hot drinks at any time, as the carafes will keep liquids hot for 24 hours or cold for 72 hours, without the use of any ice or fire. The price of the carafe is \$8.

Dirigo Compasses.

Eugene M. Sherman, of Seattle, Wash., is the manufacturer of a line of compasses and binnacles for motor boats and yacht use. These devices are made in many sizes so as to be adaptable to even the smallest type of cruising boats. Mr. Sherman states that he will refund money on any of his devices that are not satisfactory, and he points with pride to the fact that Sea Bird, on her trip across the Atlantic, and also Detroit were both equipped with Dirigo Compasses which is a good recommendation for their reliability.



The new Thermos carafe. The Model "R" Schebler carbureter.

Binnacle made by J. E. Hand & Son.

The Aaron automatic bilge pump.

Parts and Accessories.



The Pyrene fire extinguisher with new bulkhead bracket.

Pyrene Extinguishers.

Pyrene Mfg. Co., of New York City, are the makers of the well known Pyrene Extinguishers, which are particularly useful aboard motor boats, owing to the fact that they are guaranteed to extinguish fires from gasoline. The company has made a number of improvements on the extinguisher during the past year, replacing the white metal handle with one of solid brass, as well as the nozzle tube and filler cap. The body of the extinguishers is finished in brass or nickel plate. The company has also placed on the market a new type of bracket for holding the device to the bulkhead. The bracket was designed as a result of experience and experiment as to the most practical method of holding the extinguishers firmly to prevent their displacement when the boat is rolling.

Propellers, Rudders Etc.

A most complete line of propellers is carried by the Columbian Brass Foundry, of Freeport, L. I., N. Y. The celebrated Columbian speed propellers are too well known to need description here, as they have been used on many of the most prominent racing boats in the country this past season. This year new lines of propellers are being added, and they now have more than 1,700 different patterns, from which propellers can be furnished on short notice. Each of these patterns has been most carefully made and embodies the carefully worked-out Columbian principles which have made for themselves such a splendid reputation during the past five years. In addition to this large line, the company also make bronze rudders and accessories and universal struts.

The "F. & R." Vise.

The Fulton Machine and Vise Company, of Lowville, N. Y., have recently produced a vise which is specially designed for motor boatmen's use. The jaws of the vise are faced with tempered steel and by a swivel arrangement—any desired position may be attained, thus allowing the operator to place his work at an angle, still using the entire width of the jaws. Both vertical and horizontal swivels are clamped by one operation of the lever.

Bulb Shank Anchors.

These mushroom anchors are made by the Fairhaven Iron Foundry Company, of Fairhaven, Conn. The company claim that their anchor will hold much better than the ordinary mooring, owing to the fact that on the upper end of the stock there is a large ball or bulb of iron. The object of this bulb is to turn the anchor so that the stock is parallel with the bottom. Once the anchor is turned the weight will cause it to remain in that position until it has fastened itself on the bottom. After a time the weight of the bulb causes the stock to be buried, and after a short time overboard a bulb shank anchor will usually be found al-



Various types of Columbian propellers.



The "F. & R." vise is a handy tool to have about a boat.

most entirely buried in the bottom. These anchors are made in all weights from 50 to 1,000 pounds, and are amply large to hold any yacht ever built.

Sanborn Speedometer.

The Sanborn Marine Speedometer, manufactured by the American Steam Gauge and Valve Manufacturing Company, of Boston, Mass., operates on the principle of the ordinary low-pressure gauge, and is designed to show the exact speed of the craft to which it is fitted at any time. The gauge itself can be fastened in any convenient place in the boat, and is connected to the inlet tube that is installed on the bottom of the boat. The speed of the boat through the water causes a column of water to rise in the tube and move the gauge. The inlet is protected, so that there is no danger of weeds or floating debris stopping up the inlet or damaging it in any way.

Boat-Building Lumber.

Many amateur builders find that the most difficult part of boat-building is obtaining the lumber, owing to the fact that the average dealer does not carry woods adapted to boat-building. William P. Youngs & Bros., however, supply many of the large boat-building yards throughout the country, and also cater to amateur boat-builders. They make a specialty of their long-length cedar planking, and can supply it in any amount, from one plank to a carload. Many oak knees are also kept in stock, as well as large oak timbers for keels and other heavy parts of boats.

Hitchcock Bailer.

The Automatic Bilge Bailer Company, of Brookline, Mass., are the manufacturers of the Hitchcock Automatic Bilge Bailer. This device is made in two types. The first type is for comparatively slow boats and will operate at a speed of from 6 to 15 miles per hour. The second type is for all boats having a speed in excess of 10 miles per hour. Both of these devices are designed to fit on the under side of the planking, and are of scoop-shaped construction with the scoop opening aft. As the boat moves forward in the water it creates a vacuum behind the scoop which draws all the water that is in the bilge outward.

Detroit Lubricators.

A complete line of gasoline engine lubricators is manufactured in Detroit, Mich., by the Detroit Lubricator Company. These devices include every type of lubricator that is used on motor boats of any size, and also a



The Fairhaven bulb shank mooring anchor.

complete line of valves and shut-off cocks for gasoline, oil, or, in fact, any place where an appliance of this kind can be used. The gravity lubricators are manufactured in many styles, but the firm's leader for the marine trade is a line of force-feed oilers for gasoline engines. In these oilers the entire mechanism is inclosed within the case and is, consequently, lubricated at all times. They sell for from \$10 to \$87.

Welding Broken Castings.

The Waterbury Welding Co., of Waterbury, Conn., make a specialty of welding broken parts of marine and automobile engines. This work should be done by a firm that is thoroughly conversant with oxy-acetylene welding, and this house has made a particular bid for work of this kind. They state that broken or cracked cylinders, bases or other parts can be welded so that they are really stronger than they were when they were new. The oxy-acetylene process deposits a heavy patch of metal around the break, as well as uniting the broken surfaces.

Thomas Spray Hoods.

The W. E. Thomas Co., of New York, make a very complete line of spray hoods, awnings for boats and other canvas specialties, including sails. The spray hoods are mounted upon brass bows and equipped with brass fittings, and are covered with the best grade government khaki. Especially-shaped spray hoods or awnings can be made by this company, who also carry a full line of different canvases so that they can supply all wants in their line.

The Driver-Harris Ropes.

The Driver-Harris Wire Co., of Harrison, N. J., specialists in wire rope products, are making a rope especially designed for motor boat use, which they call their Titan brand of wire rope. This rope is made of either phosphor bronze or Monel metal. The rope is exceptionally strong, durable and non-corroding. The Monel metal rope, in particular, is very desirable for boats that have their steering gear exposed.

McClellan Tops and Spray Hoods.

A line of automobile type tops and spray hoods is manufactured by the Charles P. McClellan Top and Hood Company, of Fall River, Mass. The auto tops have a patented frame which makes it possible to raise or lower the top without detaching any part of it. They can be raised or lowered by one man without assistance and are, therefore, much more desirable than some of the tops that require two men to raise or lower them. The spray hoods are also a simplified construction and Mr. McClellan states that his hoods are in use on all the boats of the United States Life Saving Service.



Parts and Accessories.

Bridgeport Bronze.

Bridgeport bronze, for use on the under bodies of motor boats and sailing craft, is manufactured by the Bridgeport Marine Paint Co., of Bridgeport, Conn. It is claimed for this paint that it is not necessary to haul a boat during the summer or clean off the bottom in any way, owing to the fact that barnacles and other marine growth will not become attached to any surface covered with it.

The Morgan Priming Cups

These priming cups are manufactured by the Morgan Mfg. Co., of Newport, R. I. They are cylindrical in shape and are opened by twisting a large fibre head. When open they give a very large opening for either inspection of the cylinder or priming purposes. By twisting the head the cup is closed so that it cannot leak compression under any circumstances. The cups are made in various sizes, from $\frac{1}{8}$ to $\frac{3}{8}$ inches, and cost from 45 cents to \$1.50 apiece. They are also made with dust cover.

The Janney-Steinmetz Tank.

The advantages of the seamless type of gasoline tank are so obvious as to be apparent to anybody and in particular their worth cannot be overestimated when used in power boat construction. Janney-Steinmetz & Co., of Philadelphia and New York City, specialize in gasoline tanks constructed of cold drawn seamless steel, tinned and tested, and guaranteed not to leak. Tanks of this type were used by the 35-foot motor boat Detroit on her memorable voyage across the Atlantic.

Navalite Varnishes.

The Chicago Varnish Co., of Chicago, manufacture a general line of varnishes, and wish to call attention to their Navalite varnish, a special marine varnish which they state will not turn white under any conditions of ordinary use and in fact they claim that it will not turn white if placed in boiling water. The company state that their sales during the last year were increased approximately 100 per cent. over those of the preceding season and are looking forward to another large increase this year. While Navalite is their chief marine product they also manufacture Caboleum, an inside varnish for yachts, which is very pale in color and dries rapidly. Yacht white and yacht black are also manufactured, as well as a line of enamel. Their bottom paint comes in three different colors and they supply aluminum paint for metal surfaces, smokestacks, etc.

Perfex Ignition.

The Electric Goods Mfg. Co., of Canton, Mass., are featuring their All-In-One spark plugs for next season, although they are still manufacturing the regular plug coil with separate vibrator. Among other claims made by the company for these outfits, the most interesting is the one in which they state that their plug will not short circuit under any conditions of wet weather. This is, of course, a very important point, especially in view of the fact that many jump spark engines are installed in open boats where there is no protection whatever from the elements. It is claimed that the Perfex plug will spark even if submerged in water. The plug part of these devices is removable and can be renewed for a few cents if broken. In the All-In-One plug the coil condenser, vibrator and spark plug are all contained within a small case which screws directly into the cylinder. There are therefore no high tension wires and the wiring consists simply of connecting the batteries, timer and coils, in circuit.

Yankee Silent Muffler.

The Yankee silent marine muffler is manufactured by the Yankee Co., of Utica, N. Y., who advance many reasons why it should be used in preference to others. Perhaps the principal claim made is that when the Yankee

is fitted, gasoline consumption is reduced, on account of the perfect manner in which the muffler discharges burnt gases at each explosion. Other points are simplicity of fitting, absence of loose parts and durability. The manufacturers give a full guarantee and agree to refund purchase price and transportation charges if not satisfactory.

Cameras and Supplies.

A motor boat cruise without a camera is almost as bad as a motor boat cruise without a boat. All cruisers know that half the enjoyment of a trip is the remembrances that a good set of photographs bring to mind. It was with this in mind that the Herbert and Heesgen Co., of New York made up their minds to put in a special bid for the motor boat owners' trade. This company carries a complete line of cameras, films and plates of all types, so that the cruiser can be supplied with whatever outfit suits his fancy and pocketbook. As many cruisers wish to develop their pictures en route, this firm also carries a line of developing tanks and supplies so that the picture taker can have his pictures developed within an hour or so of the time he takes them.

Reliance Rochester Controls.

The W. S. Hall Company, of Rochester, N. Y., have added to their line of motor boat steering gears a heavy duty cruiser control. This consists of a heavy vertical column surmounted by two mahogany wheels, the upper one being the steering wheel and the one slightly below it, the reversing wheel. The spark and throttle controls are in the center of the upper wheel. The mechanism of the device, which is below the deck fitting, is mounted on ball bearings and consists of two heavy spur gears operating in a bronze rack. One rack is attached to the steering cable, and the other rack to the reverse gear. The spark and throttle levers are mounted below the racks. Another addition is called their Baby Gear and is built of the same high grade material as their larger gears, but is intended for smaller boats requiring a low priced outfit. The company will continue to make their well known gears with the scored drum.

Motsinger Carbureter.

The past few months the Motsinger Device Mfg. Co., of La Fayette, Ind., have been marketing a carbureter in addition to their old line of ignition and lighting apparatus for motor boats. This carbureter has as its principal feature an air valve and needle valve of such peculiar form that the volume of mixture is always in direct proportion to the lift of these valves. The air valve lifts the gasoline needle, thus insuring a perfect mixture at all engine speeds. There is but one adjustment which varies the proportional lift between the two valves, made necessary by changes in temperature. This adjustment can be made from the steering wheel. The instrument is finished in black nickel with brass trimmings and adds much to the appearance of a power plant. These carbureters are made in seven different sizes, from $\frac{3}{8}$ inch to $2\frac{1}{2}$ inch.

Coe Gold Leaf.

Coe's ribbon gold leaf is made by the W. H. Coe Manufacturing Co., of Providence, R. I., and has been on the market and favorably known for the last ten years. This leaf comes in a new form of container, consisting of a handle and roller on which the gold leaf is wound. To use the outfit it is only necessary to place the roller on the article you wish covered and run the device along in a straight line, which will cause the leaf to unroll and perfectly cover the surface.

Crank Shaft Forgings.

P. H. Gill, and Sons, of Brooklyn, N. Y., specialize on drop-forged crankshafts and will make them up in any number. They manu-

facture them complete in their own plant, forging them from the solid billet, grinding all pins and bearings, and finish the shaft so that it is ready to slip into the motor when received by the customer.

Harthan Propellers.

A line of first class propellers, shaft bearings, universal joints, propeller jacks, shaft couplings, and reverse gears, is made by the McFarland Foundry and Machine Co., of Trenton, N. J. These goods are made in many different sizes and types and are suitable for all types of boats. During the past season the company have had very great success with their propellers installed upon speed boats and they wish to make a special feature of this trade.

Motor Boat Tops

Feeling the necessity of the market for high grade motor boat tops, awnings, cushions, pillows and other goods of a like character, the C. Z. Kroh Mfg. Co. have got out a line of these goods which is very inclusive. Among their leaders might be mentioned their life preserver pillows and cushions. These outfits are intended to be used on motor boats and yachts and are finished in a variety of coverings making soft and attractive cushions and pillows, for use throughout the boat. In case of accident, these cushions can be thrown overboard and are guaranteed to support a man almost indefinitely. The pillows and cushions are provided with strong handles.

Lubroleine and Neptune Launching Grease.

Fiske Brothers Refining Co., New York City and Newark, N. J., are specialists in the manufacture of lubricants ranging from clear water-white motor oil to the less refined, but equally necessary substance which is used to persuade the newly built vessel that her proper element is water and that the sooner and the more smoothly she leaves the shipyard the better for all concerned. Lubroleine, which is called by its manufacturers the "aristocrat of motor oils," is supplied in several grades. Crystal is a clear oil of low cold test and medium consistency. It is free from carbon-forming properties and is recommended for water-cooled engines. Lubroleine extra oil is a heavy lubricant, and should be used in cases where high compression and great crankshaft strains make it essential to use a heavy-bodied oil.

Hyde Turbine Type Propellers.

The Hyde turbine propellers are made by the Hyde Windlass Co., of Bath, Me., from a special grade of manganese bronze, a non-corrosive metal of the highest tensile strength. This metal is the same as has been used in the manufacture of propellers for naval vessels for the last fifteen years. The wheels are made from metal patterns which are correctly balanced. The blades are of large area and it is claimed for them that they run without the disagreeable vibration noticed with so many wheels. The wheels are manufactured in either two or three-blade types, and in either right or left hand from 8 inches in diameter to 30 inches.

Kuhls Paints.

This line of marine paints is made by H. B. Fred Kuhls, of Brooklyn, N. Y., and includes outside paints for both wood and metal vessels, and an elastic seam composition designed to be used instead of putty to fill deck seams. It is stated that this composition will never harden and crack out of the seam, and the material is thus far superior to putty or white lead, owing to the ease with which these latter articles can be knocked out or jarred out of the seams. Mr. Kuhls also makes an elastic yacht paint, designed for the outside of yachts and boats, and which, he claims, will not chip off or crack from vibration and twisting strains of the hull. Copper bottom paints are also made.



PRIZE CONTEST in Questions and Answers

Fitting a Swinging Port Light.

THE PRIZE CONTEST—Answers to the First Question in the October Issue.

Several Different Schemes for This Important Part of Cruiser Construction.

Three Types Compared.

THERE are two general types of port lights manufactured. In one the flange is designed to show a finish against the outside of the planking or cabin siding, somewhat as shown on the sketch in Fig. 1, while in the other the flange is made to fit against the inside of the cabin siding or planking, as the case may be, a brass tube of proper length extending from the flange to the outside of planking, protruding far enough to finish flush, and fitted with a narrow brass ring, as shown in the drawing, Fig. 2.

The type shown in Fig. 1 is the least expensive to buy, and, when fitted as shown in the drawing, Fig. 3, makes a very ship-shape job. Ordinarily, the brass rim of the port light is fitted against the outside of the planking, and in this case the rim shows an appearance too large to look well. Drawing, Fig. 1, shows the rim fitted against the inside of the planking, allowing the small projection to protrude in the hole, then screwed fast, and the rough face covered with a $\frac{1}{2}$ " wooden panel cut to fit over and around the hinges and lock. The outside of planking about the hole is built in nicely, which makes a well-appearing finish. By casing it about inside as shown, the finish is complete. The design and type of port light shown in Fig. 2 allows of the same treatment of finish of the woodwork. The finish of the outside of the boat is accomplished by tube on the light and the ring. WM. ATKIN, Huntington, L. I.

The Light That's Different.

PERHAPS one of the most important details of cabin construction is the proper fitting of some suitable type of port light. The detailed sketches accompanying illustrate a window somewhat different in makeup from the ordinary kind, and, although not of the hinged or swinging type, it can be opened or closed by simply lowering or raising. By carrying out the following instructions, little difficulty will be experienced in completing this style of port. The window proper consists of a stock round frame for glass screwed tightly to a piece of sheet brass about $\frac{3}{16}$ " of an inch thick. The frame is fitted with a stock round port light glass. Both frame and glass can be secured from any marine supply house.

The brass plate should be first cut about square and the edges filed up true to each other. The center should then be located by drawing diagonal lines from corner to corner, and the point where these lines intersect, dot punched. Take a pair of dividers and, with the punch hole as a center, draw a circle exactly the same diameter as the hole in the stock frame. Bore out the metal within the circumference. This can be readily and neatly done by holding the plate in a two-jawed clinch

QUESTIONS FOR THE FEBRUARY ISSUE.

1. Discuss the efficiency of bilge keels and their effect on the behavior of a moderate size cruiser, together with the proper placing of the same.

Suggested by C. D. Davis, Nyack, N. Y.

2. Explain and illustrate the installation of spark, throttle and reverse gear controls, when engine is located at some distance from them.

Suggested by N. H. Jocelyn, Brooklyn, N. Y.

3. Design a safe and practical method of getting a new motor aboard of a cruiser.

Suggested by W. B. Moores, Newburgh, N. Y.

RULES FOR THE CONTEST.

Answers to these questions, addressed to the Editor of *McTear's Boat*, 119 West 40th St., New York, must be: (a) In our hands on or before December 26, (b) about 500 words long, (c) written on one side of the paper only, (d) accompanied by the sender's name and address. (The name will be withheld and initials or a pseudonym used if this is desired.) Questions for the next contest should reach us on or before the 26th of December.

The prizes are: For each of the best answers to the questions above, any article advertised in the current issue of *McTear's Boat*, of which the advertised price does not exceed \$25, or a credit of \$25 on any article advertised in the current issue of *McTear's Boat* which sells for more than that amount. (There are three prizes, one for each question, and a contestant need send in an answer to but one if he does not care to answer all.)

For each of the questions selected for use in the next contest, any article advertised in this issue of *McTear's Boat*, of which the advertised price does not exceed \$5, or a credit of \$5 on any article advertised in this issue of *McTear's Boat*, which sells for more than that amount.

For non-prize-winning answers published we will pay space rates.

Method of Fastening to the Outside Planking Frames and Interior Ceiling.

in a lathe. Next, drill and tap the screw holes, spotting these from the frame itself, which should be held in place against the brass plate. Drill and tap a hole at each upper corner for a $\frac{1}{4}$ " standard bolt.

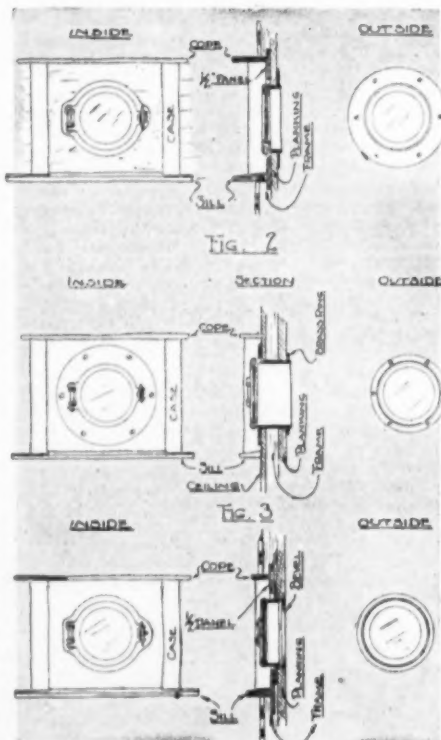
Two $\frac{1}{2}$ " standard brass bolts of a length equal to the distance from the inner face of the cabin planking to the inner face of the cabin sheathing plus 1 inch should be secured. The heads of these bolts should then be filed flat to $\frac{1}{4}$ " thickness. The bolts are to be then screwed in place through the holes provided in the plate and check nuts filed down to $\frac{1}{4}$ " thickness fitted as shown in sketch. Each bolt should be supplied with a $\frac{1}{2}$ " standard thumb or wing nut.

File up two guide strips from $\frac{1}{16}$ " sheet brass with slots $\frac{9}{16}$ " wide and of sufficient length to allow the bolts to slide back and forth far enough so the top edge of the brass plate clears the opening cut in the cabin planking when the window is lowered, after the guide strips are in place on the cabin sheathing.

Two side cleats of white oak are next to be chiseled out and smoothed up. See sketch for shape. These are nailed or screwed securely to the inner face of the cabin planking, one on either side of the brass plate, such a distance apart as to allow a nice sliding fit for the plate, and not so close as to cause binding. These side cleats should also be of a sufficient length to allow the top edge of the brass plate to clear the round hole in the cabin planking when the window is lowered. The top and bottom cleats are narrow strips of oak fastened across the ends of the side cleats at fixed positions. The bottom cleat is nailed to the planking at the desired position of clearance when the top edge of the brass plate passes the opening in the planking and prevents the window from falling too far. The top cleat is nailed at such a position as to allow the upper edge of the brass plate to butt up against its (cleat) lower face when the window is raised and closed tight.

The assembly sketch illustrates clearly how the composite parts go together when finished. The outer round frame is of the same pattern as the inner one, only without the glass, being screwed to the cabin planking for the sake of appearance, and may be either let into the plank flush with the surface or just screwed on as shown. After filing down the bolt heads as directed, it is a good plan to chisel out a "scarf" in the plank about $\frac{5}{16}$ " inches deep, along the path in which each bolt head runs, when sliding up and down. This enables the plate to set flat against the planking.

If the parts are made with an ordinary amount of care, the woodwork around each window finished up neatly, and if the interior parts that show are polished, the appearance of the window is pleasing. If short curtains of thin texture are hung within the cabin, the effect is perhaps increased. This, on the whole, makes a good and



Three methods suggested by Mr. Atkin.

When you send in your answers you must state what you will take for a prize, should you win one.

practical window at a greatly reduced cost over the swinging type, and if fitted with a fairly heavy glass is much less liable to damage.

Too free a use of curtains and draperies aboard the small cruiser should be avoided, however.

C. E. BRADLEY,
Fall River, Mass.

A Plain, Watertight Port.

THE popularity of the raised-deck type of cruiser has been responsible for the development of a type of air port unknown in sailboating days. Chief among the new ports is the type fitted with a skirt or collar which

an outside diameter equal to the finished inside diameter of the opening in the frame, in the frame, in the above case $6\frac{1}{4}$ ". Sheet lead $1/16$ " in thickness and of a width of 4" greater than the combined thickness of planking, ribs and ceiling should be used to permit flanging. The lead should be scraped clean at the ends and bent around the block until the edges butt, fastened with a wire to hold it in place while soldering. It is important to make a butt joint, as shown in Fig. 2, as a lap joint will not make a neat job, and gives trouble in flanging. The lead ferrule should be placed in the port hole with the seam on the bottom, this being done to make easy soldering in case the seam should open through rough handling in flanging. Four inches width in excess of the total thickness has been allowed in the ferrule

This method of construction is applicable to oval and bent frame ports, and is particularly adapted to boats of the raised-deck type, where the ceiling is carried to the carlins. The lead flanges, acting as a gasket, make a good mechanical job and the frame used as trim protects the lead from injury and avoids the neat fitting necessitated by the skirted type of air port.

D. STANBROUGH, Norfolk, Va.

The Round Port Light.

A HOLE was sawed in the planking large enough to admit the rim of the light—a snug fit. The sawed edges were given two coats of white lead, and the frame set in thick white lead and screwed fast, the surplus paint being wiped off.

Before this final adjustment, the rim had been filed off till it came flush with the outside of the planking, which was $3/8$ inch at this part, and also a lump of solder had been placed on the end of the toggle bolt to keep the thumb nut from coming all the way off and being lost.

The light was placed halfway between two ribs and a frame of one inch thick wood was built around it. First, two pieces were placed at the sides up against the boat ribs and touching the planking. These were rounded on the exposed edge and this edge extended one inch beyond the face of the rib. A top piece of the same material was placed across the tops of these two pieces, but it extended about $1\frac{1}{2}$ inches beyond the rib. A bottom piece or sill was fitted similar to the top piece, but a $1/8$ -inch crack was left between this piece and the planking to allow any water that might leak in to run into the bilge. The surface of this sill was beveled toward this crack. The ceiling lumber was run up to this frame and nailed to the ribs.

The ceiling lumber and the frame were of the same material and were varnished bright, but that part of the planking exposed around the light was white enameled.

A Pantasote curtain was also fitted.

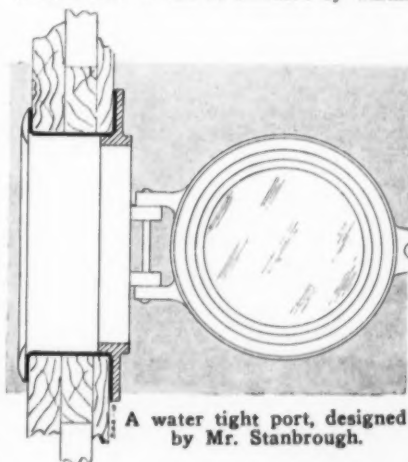
L. R. KELLEY, Philadelphia.

Method of fitting the port light, suggested by Mr. Bradley.

can be ordered to fit any given total thickness of planking, ribs and ceiling, coming flush on the in or outside, depending on the style of port used. This type of port requires a neat job of fitting, and, as it is only furnished to order in brass, is expensive. The method of installing the air port, as described in this article, permits the use of the plain type of air port and, at the same time, assures a thoroughly watertight and serviceable job without requiring anything but ordinary skill.

The parts of the installation, as shown in Fig. 1, consist of a round frame, a lead sleeve and the air port. The sizes of air ports are listed in the diameter of the opening which, in a 6-inch port, is 6". By consulting a marine hardware catalog, it will be found to give the inside and outside diameters of "Round Frames for Glass." For use with the above port, a frame having an inside diameter of $6\frac{1}{4}$ " would be selected. The holes in the top sides for the ports should be cut before the ceiling is in place, so as to permit the space between the planking and the ceiling to be filled with a block having a hole cut in it of the proper diameter for the sleeve. For the above port the planking should be scribed with a diameter of $6\frac{9}{16}$ " which, when the $1/16$ " sheet lead ferrule is in place, will give a finished inside diameter of $6\frac{1}{2}$ ". After the hole has been cut with a compass saw a filling block of the thickness of the ribs should be secured in place, and the ceiling continued from the sheer clamp to the deck clamp, cutting out the ceiling in the way of the portholes, as it is carried by them. To make the sleeves, a block is required of

and this should be divided, allowing 2" to project inboard. To flange a piece of soft wood with one side cut to the radius of the finished inside diameter the method is slightly different. The flanging process should be gradual. Light blows should be struck all around, bringing it first to a bell shape and then gradually flattening down. Should the lead become hard it can be annealed by warming

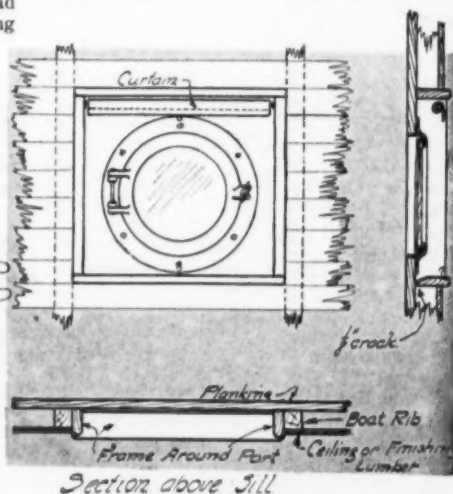


A water tight port, designed by Mr. Stanbrough.

slightly with a blow torch; if care is taken to work the flange over gradually, no trouble will be experienced with the seams opening. After the inside flange has been turned, the air port should be secured in place by brass stove bolts put in through the planking from the outside, the bolt heads being counter-sunk and puttied.

Ports with Long Sleeves.

THE ordinary swinging port lights are not very well adapted for the cabin sides of a raised-deck cruiser on account of the thickness of the cabin walls. Special port

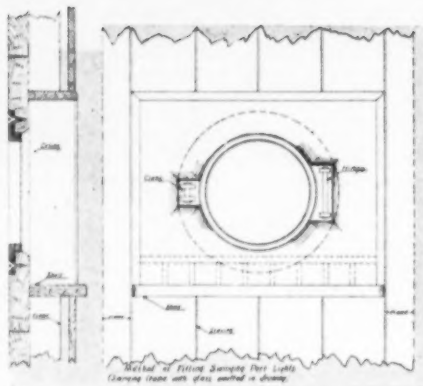


lights with extra long sleeves and other arrangements can be obtained, but are higher in price.

One method of fitting the ordinary brass swinging ports is shown in the drawings, the glass and swinging frame

having been omitted for clearness. To make a smooth finish outside a rabbet is shown to take the rim of the port, making it flush with the outside of the planking, but this rabbet is not absolutely necessary. The inside rim of the frame should fit tightly the hole cut in the cabin side; spaces will also have to be cut out for the hinge and clasp, but do not make these spaces any larger than necessary, and in no case let them extend beyond the outside rim of the frame. The inside edges of the openings should be neatly rounded off, and sand-papered smooth.

A rubber or canvas gasket set in white lead should be placed between the outside frame and the planking to make a watertight job.



Mr. Parker's simple design.

The frame can be fastened outside with brass screws or with brass stove bolts.

A good interior finish for the port is an oblong casing as shown. This can be as wide as the space between two of the frames each side of the port, probably about ten inches. In the drawing A, T and C, inside staving is shown, the port casing coming out flush with this staving, except for the lower shelf which extends out about half an inch. A pin-rail, as shown by dotted lines, could be added. This shelf will be found very convenient for the temporary storage of glasses, etc. In any case, the casing should be made long enough and high enough so as not to interfere with the opening of the swinging port. H. H. PARKER, Oakland, Cal.

Cleaning the Fuel Tanks.

Satisfactory and Efficient Methods for Removing the Accumulated Rust and Scale from the Interior. Preventing Sediment from Entering the Feed Pipe and Carbureter.

THE PRIZE CONTEST—Answers to the Second Question in the October Issue.

Auxiliary Filtration.

SOME of the most common diseases the motor boat is subject to are caused by "dirty" gasoline, causing congested feed pipes, etc. In treating this it is essential that a means of filtrating the fuel or some other practical means be devised.

Filtration is the fundamental basis of the first method I will discuss. It is a slow process of filtering the gasoline before or while putting it into the tank, so the most feasible means is to place a small filtering tank between the main tank and the carbureter.

The tank is so constructed as to have a watertight hand hole, and the easiest and best tank of this sort may be made by taking a piece of 6" brass pipe (not heavy) about one foot long, one end of which may be soldered tight, but the other may be threaded and fitted with a removable cap. Through the center of this tank is fixed a fine wire screen that fits closely on all sides and upon this is placed a good thick layer of clean waste, and another screen (not necessarily fine) is then placed upon this, and upon this is placed a layer of chemically pure charcoal. This latter may be omitted altogether and only the waste used.

A very good idea of such a tank and arrangement can be received from the drawing. I would suggest that the pipe connecting the two be at least $\frac{1}{2}$ inch. In addition to this, the feed pipe may have a U curve with a top at the lower extremity, and should any sediment get through the tank, it will be collected here.

This method is being successfully employed on stationary as well as marine engines, and I guarantee that nothing but clean gasoline will reach the carbureter.

The second method, which, in my estimation, is equally as good or better, especially from an economical standpoint, than the first, consists

of placing a large-sized glass oil lubricator between the tank and carbureter, as shown in the drawing, the intake pipe being somewhat larger than the outlet. As the fuel passes through this cup, all sediment will settle to the bottom, and, furthermore, a most commendable feature of this method is the fact that should there be any water in the gasoline it will settle to the bottom, and can easily be drained off, through the outlet at the bottom, by manipulating the thumb screw at the top. This method has been used with great success on several great racers, which is worthy of note.

As to a satisfactory method of cleaning rust and scale from a tank, I suggest the purchase of about a pound of small hard steel bearings. The process consists of placing these bearings in the tank and a small amount of kerosene, and by shaking and rolling the tank these bearings tear loose all scale and rust.

P. RHODES, Newark, Ohio.

A Chemical Cleansing.

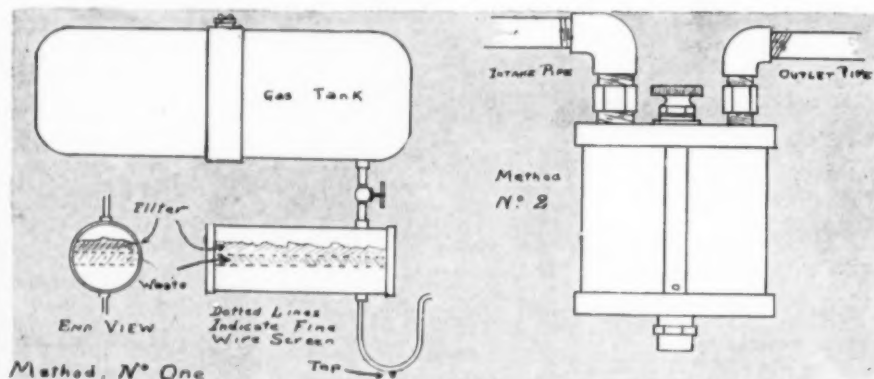
THE amount of rust and sediment that will accumulate in a tank in the course of several season's use will be a revelation to the man who has never taken the trouble to

inevitable happens, and once it starts the result more than makes up for the previous freedom from annoyance. The following method of cleaning will be found effective and different from the ordinary methods.

Mix a 10 per cent. solution of sulphuric acid, using two pounds of commercial vitriol to the contents of a ten-quart bucket of water. Though liquid, this acid is sold by the pound. Two pounds make a quart, costing about thirty to thirty-five cents. The acid is extremely corrosive and must be handled very carefully. Use a wooden bucket and pour the acid into the water (not vice versa) very slowly, taking care that none of it comes into contact with the hands or clothing, as it will cause painful and dangerous burns and will ruin fabrics. The mixing of the acid and water is attended by a chemical reaction, liberating considerable heat, so that it should be done slowly and the resulting solution allowed to cool before using. Into another bucket of water, dump two pounds of bicarbonate of soda, stirring until well dissolved.

If the tank can be removed from the boat, so much the better, but this method will be found the most effective that can be applied to a tank that cannot be moved conveniently.

Having disconnected the feed line and inserted a draw-off cock in the outlet (assuming that the tank is not already so provided), pour in the acid solution. Allow it to remain in the tank fifteen minutes, meanwhile shaking the tank, if it has been removed, or otherwise agitating its contents, if it has not. This will serve to loosen the scale adhering to the metal and let the acid get at a great deal more of it than where the solution remains quiet in the tank. Draw off



Two methods of filtering the fuel, suggested by Mr. Rhodes.

investigate this important essential of the power plant. In fact, it is a wonder that so little of this accumulation, comparatively speaking, finds its way back to the carbureter to cause trouble. What does is usually so finely divided that it passes through without clogging anything. But if allowed to go too long, the

solution remains quiet in the tank. Draw off the acid solution at the end of fifteen minutes and immediately fill the tank with water. Draw off the water and pour in the alkaline solution (soda and water) to

neutralize the acid and prevent any traces of it that may remain from attacking the metal further. Shake so that this solution will come in contact with every part of the tank. Then fill with water, leaving the weakened soda solution in the tank over night, or until such time as it may be handy to draw it off again.

This solution cannot do any damage, and as it may be taken for granted that the cleaning operation is performed upon going out of commission, it may be left in the tank indefinitely, if necessary. After drawing it off, leave the filler and outlet open for several days, so that all traces of water will evaporate.

No amount of care will prevent the accumulation of sediment and scale in an iron tank. The use of a funnel with a fine screen opening and a chamois will minimize the amount of foreign matter that enters and the fitting of a "sump" will prevent what does get through from reaching the carburetor. This can be bought as a "gasoline strainer," either for fitting at the tank or in the feed line near the carburetor. If not conveniently obtainable, one can be made with little trouble. Assuming that the outlet is tapped for $\frac{1}{4}$ -inch iron pipe, procure a $\frac{1}{4}$ -inch nipple, $\frac{1}{2}$ to $\frac{1}{4}$ -inch reducer, $\frac{1}{2}$ -inch close nipple, $\frac{1}{2}$ -inch coupling, a $\frac{1}{2}$ -inch galvanized tee, two $\frac{1}{2}$ to $\frac{1}{4}$ -inch bushings, a $\frac{1}{4}$ -inch brass pet cock, and a small piece of very fine brass screen. These materials should not cost more than a dollar.

A small circular piece slightly larger than the opening of the $\frac{1}{2}$ -inch tee should be cut from the brass screen and soldered into the right-angled outlet of the tee. This may appear difficult, but can be accomplished as follows: Scrape a bright ring around the metal at the point the screen is to rest, put some soldering flux on the metal, and do likewise to the edges of the piece of screen. Stand the tee on a piece of stone or metal on its short branch, i. e., so that the long part of it is horizontal. Take some fine wire solder and cut into very small pieces. Put the screen in position and place the fine pieces of solder all around its edges. This can be done with a pair of tweezers. Then heat the tee at its center with a gasoline torch until the solder flows evenly. This will make a neat and workmanlike job.

Screw the $\frac{1}{4}$ -inch close nipple into the tank; turn on to this the reducer, then the $\frac{1}{2}$ -inch close nipple, the tee, the 3-inch nipple, the $\frac{1}{2}$ -inch coupling, $\frac{1}{2}$ by $\frac{1}{4}$ -inch bushing and the petcock. Then turn the other bushing into the outlet of the tee, into which the screen has been soldered. Into this bushing screw the standing part of the union coupling of the feed line, and attach the latter. This will trap all sediment, and it can be drawn off from time to time through the petcock. The accumulation of a season's use will usually plug up the latter so that a wire will be necessary to start the gasoline flowing through it and the amount of dirt that follows will be a surprise to every owner and a warning as to what may happen to every careless owner.

CHARLES B. HAYWARD, Great Neck, L. I.

Sediment Not Serious if Properly Collected.

SEDIMENT, i. e., dirt, rust, scale, etc., from the inside of the tanks or from the fuel has caused many of the engine troubles often attributed to other causes. One of the Bermuda racers was "out" over an hour, with the flow of gas stopped by sediment. These troubles may be avoided, but keeping sediment out of the tanks is

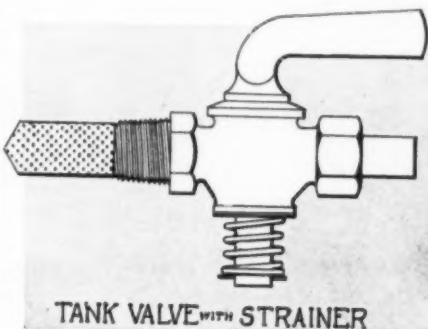
not as easily accomplished. The scheme is to clean the tanks and then keep any sediment that may collect later where it cannot cause trouble.

Opinions differ as to the best material out of which to construct the tank. There are many advocates of the copper tank—also many of the galvanized tank. The pressed steel tank is also often used. A balance must be chosen between first cost and cost of maintenance in the study of the best material.

The tank can be thoroughly cleaned without removing it from the boat, which saves the tearing up of decks or bulkhead in not a few of the modern motor craft. Just boil it out with steam. Remove the supply pipe, leaving the shut-off in the tank. Fill the tank with hot water, to which has been added a liberal amount of washing soda. Leave the cap off. Connect a steam hose to the outlet and let her boil. After fifteen or twenty minutes' boiling, all the sediment will be loosened and well mixed through the water.

Live steam under pressure (say, fifteen or twenty pounds) is best if readily obtainable. If not, construct a boiler from a strong can.

Immediately after shutting off the steam, before the dirt has a chance to settle, drain the tanks and rinse thoroughly with hot water.



Valve with strainer to fit in tank outlet, suggested by Mr. Moores.

Being hot, the tanks will dry in a short time. It might be interesting to catch the sediment in a strainer just to see the result. Don't use a match or a candle to inspect the inside—use an electric light. Although there may not have been any gasoline in the tank for several months, there might be enough vapor to explode if it came in contact with a flame or spark. If low pressure steam (made with a can) is used, the boiling might be repeated to advantage.

Keeping a galvanized tank clean is sometimes difficult. Gasoline effects some galvanizing, causing the scale, and even straining all the fuel through chamois will not prevent the entrance of some dirt from the sides of the funnel, and around the cap when it is unscrewed.

All trouble from sediment can be prevented by soldering a perforated tube or wire mesh to the top of the outlet valve, as shown in the drawing. The strainer is about $1\frac{1}{2}$ inches long, and of a diameter to just enter without binding on the threads. The top is closed. This will stop all the dirt from entering the pipe line and clogging it, and the carburetor strainer will stop the water and minute particles which pass the tank strainer.

What tank will collect an inch and a half of dirt in one season? Even with a considerable amount of sediment around the bottom of the strainer there will still be ample space for the passage of the fuel, be it gasoline, kerosene or distillate.

With the flow of fuel assured, one of the main annoyances and oft times danger, for it is in rough water that the accumulation is stirred up and most apt to cause trouble, is eliminated. W. B. MOORES, Newburgh, N. Y.

Cleaned by Friction.

TO PROPERLY cleanse the accumulated rust and scale from a fuel tank is quite a considerable task and requires a great deal of time and patience. Trouble from sediment clogging the gasoline piping is especially prevalent where cylindrical galvanized steel tanks are used. A fine white powder (zinc oxide) known as dross and originating from the zinc used in galvanizing adheres quite firmly to the metal of the tank and is the principal source of trouble. This dross cannot be washed out.

The best method of getting rid of dross seems to be that of rattling. To do this, place about a gallon pail full of old nuts or washers in the tank, plug it up and suspend by two belts from a revolving shaft such as the line shaft of a machine shop. The tank should be confined endwise and the belts guided to prevent them dropping the tank. The belts moving the shaft revolve the tank and cause the nuts to roll over and over inside, loosening the dross. The tank should be rattled from one to two hours and then taken down and all the nuts and as much of the loosened dross as possible removed. The rest should be rinsed out with a little gasoline. The nuts should be thoroughly cleaned with gasoline before being put back into the tank to be rattled again. This process must usually be repeated several times, depending upon the condition of the tank, but enough until the inside is well polished. Then one of the belts should be shortened so that the tank will revolve at an angle. The nuts will then clean off one end, after which the tank can be reversed and the other end cleaned. The lower end should be well supported to prevent the tank from sliding in the belts.

Tanks which are built up from sheet stock are usually galvanized before assembly and the trouble from dross is at first eliminated. But as they are used the surface metal oxidizes and may cause trouble. These tanks are usually of odd shape and have to be treated in some special manner. If a small pulley at the end of a revolving shaft can be found, a bolt or rod can be clamped across the face of it, extending outward, from which a wooden slat with a hole in the end can be hung, making a rough crank, which supports one end of a triangular-shaped cradle, to which the tank is strapped. Such a rig can be quickly assembled from odds and ends to serve the purpose. Where the sheet metal of the tank is quite thin or the flat surfaces extensive, only small nuts should be used. Shot or small pebbles may be used in place of nuts or washers, but the writer has had better success with objects having corners. Of course, if power is not available, any tank may be rattled by hand, but this is a very tedious, though effective, process.

For the mechanical cleansing method many prefer the use of steel balls or other material which has no sharp corners and edges, as the latter tend to scratch the surface and increase the liability of rust starting.

To eliminate trouble from sediment, always fill the tank through chamois; use a pipe strainer close to the tank and another by the carburetor, being sure to clean them out at reasonable intervals, and, above all, use at least $\frac{1}{4}$ " brass piping or $\frac{3}{8}$ " copper tubing for the pipe line.

R. W. GODDARD, Lincoln, Neb.

NOTE: The above four answers to the "Fuel Question" are representative of a very large number of excellent replies to this question which we received, but are unable to print, owing to lack of space.



Michigan-Detroit Combination.

It has just been announced that the Michigan Steel Boat Company and the Detroit Boat Company have formed a combination. The new organization calls our attention to the fact that it will now be in a position to give an absolutely unbiased opinion as to whether a wood or a steel boat will be best for any given set of conditions. The catalogue, "Blue Bird Boats," will be ready for delivery first. This booklet will elaborate, and will describe the respective advantages of boats. It will be sent free by McToll Boat Co. readers. This company is putting out for the coming year a "Blue Bird

eight times the company's output during the year 1913. Mr. Ernest McGeorge, of Cleveland, whose work for The Ferro Machine & Foundry Company, and other large manufacturing establishments in Northern Ohio, had attracted wide and favorable notice, was engaged as the company's consulting engineer.

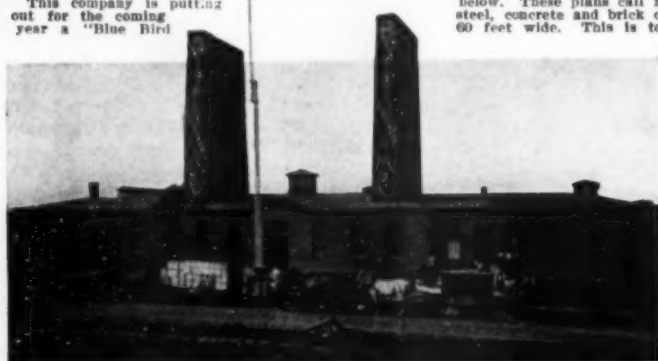
Before starting work Mr. McGeorge came to Detroit and spent several days with the officers of the company, making a careful study of Van Blerck's present output and future prospects, both as to the number of engines to be built and new models to be added to their line. He was instructed to take full account of present and future developments and to outline to the company an ultimate and ideal manufacturing establishment.

The result of these plans is shown in the illustration below. These plans call for a single story building of steel, concrete and brick construction, 500 feet long x 60 feet wide. This is to be the main machine and

to give systematic and economical handling of material. The store-room will be of unusual size to provide proper storage for finished and unfinished parts, the company's purpose being to give the best possible service to its customers the world over in the matter of repair parts and supplies—repair parts that fit—and shipped on a moment's notice.

The Van Blerck Motor Company was most fortunate in securing an ideal manufacturing location in Monroe, Mich. Five freight lines pass within short hauling distance of their plant.

Latest advice from Mr. Van Blerck are to the effect that the entire building will be ready for occupancy not later than December statement is made by the time "Motor Boating" is in the hands of its readers every wheel in the company's new plant will be in full operation.



The fine new plant of the David B. Crockett Co., at Bridgeport, Conn., manufacturers of the well known Crockett paints and varnishes. This factory houses a notable gathering of all the most modern and scientific apparatus for making paints and varnishes of every sort.

Special," a ladies' runabout having automatic starting device, steering wheel and unusually roomy and comfortable deck accommodations. The price of the boat is \$225. The organization is also adding to its plant a four-story cement building. In view of the increase in export business, it is hoped that it will be necessary to turn over one of the firm's buildings to the exclusive production of outfits for foreign consumption.

Van Blerck's New Home.

Announcement has previously been made in these columns of the new factory being erected by the Van Blerck Motor Company, at Monroe, Michigan.

When the idea of a new factory was first talked of by the officers of the company it was determined to erect on the new site secured the most modern and up-to-date motor factory in the country. This involved a preliminary study of a plan for an ideal or ultimate plant, a plant having a capacity in engines about

and test house, 100 feet x 30 feet, and a miscellaneous storehouse, 160 feet x 30 feet. The prospective office building, 70 feet x 30 feet, with the time-keeper's office on the side, being located in the left foreground.

After these plans were prepared by Engineer McGeorge it was found that an initial building, 60 feet wide x 176½ feet long, would take care of the company's immediate requirements, and would yet fit into the ultimate plans and form an integral part of the proposed ideal plant. It is this portion of the above buildings, together with power-house to the left, that is now in the course of erection.

The Van Blerck Motor Company claim that this new plant is the last word in modern motor factories. Every device known to factory engineering operating at once for quality and economy in manufacture has been adopted. As stated above, the new buildings are all of concrete, brick and steel construction and are absolutely fire-proof.

Machines will be arranged in the most scientific order



Liline, a 65½ foot English yacht, powered with a 36 H. P. Wolverine engine, burning kerosene.

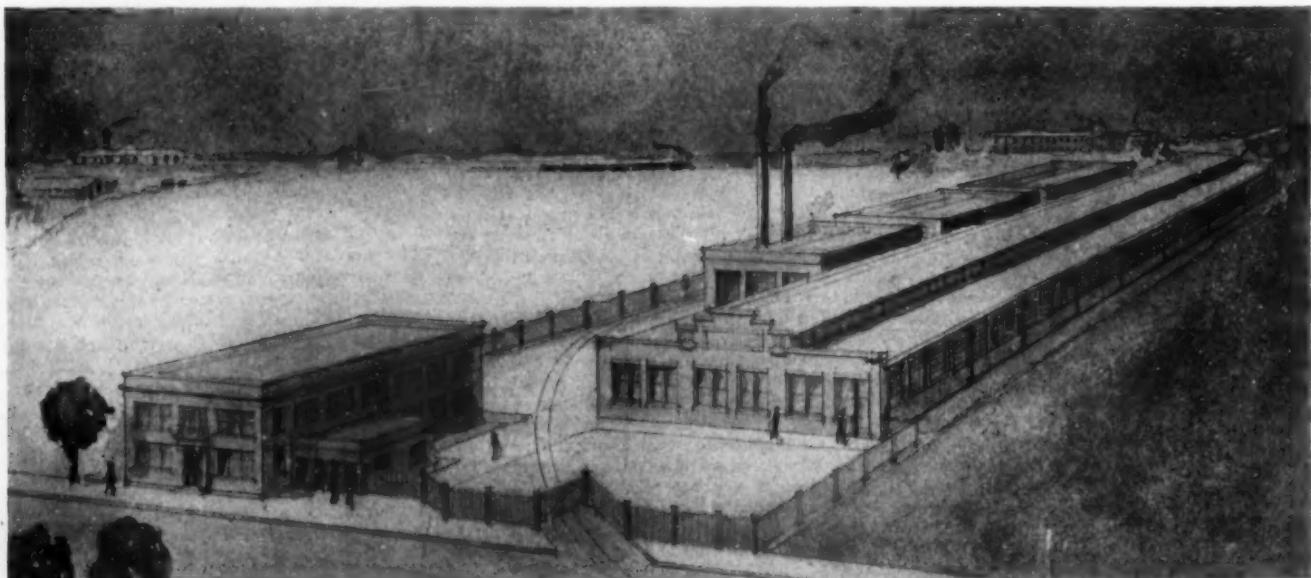
All mail should hereafter be addressed to the Van Blerck Motor Company, Monroe, Mich.

The Durkee Fire.

On November 15th a fire took place in the New York warehouse of Chas. D. Durkee & Co., at 2 and 3 South Street, New York City. The Messrs. Durkee request us to announce that while this may for a short time interfere somewhat with their making prompt shipments, the delay will only be a matter of a few days in delivery. They ask the kind consideration of their hosts of friends and patrons, pending the refitting of their warehouse and in the meantime will make prompt shipments of all orders direct from the factory at no additional expense to customers. With the energy that has always characterized this concern, the business of refitting is going on and it will be only a short time before everything is running smoothly again.

One for the "Dandy Diak."

The following extract from a letter recently received by the Water Craft Co., 223 Fulton street, New York



The fine new plant of the Van Blerck Motor Company, at Monroe, Mich., which is described herewith.

City, tells its own story of the efficiency of this concern's little "Dandy Dink".

"Having had the rare good luck to purchase one of your ten-foot 'Dandy Dinks,' equipped with a two-horse Brownie engine, it might be of some interest to you to know of the behavior of this wonderful little boat on my trip from Block Island to Port Jefferson last July. The South-easter of the previous day had blown itself out, leaving a big roll on outside the harbor. The rattling of blocks and flapping of sail soon made us wish for sweeter music, so I clewed down everything and decided to come up the sound under power. The engine in my yawl is only seven horsepower, which does not drive me over five miles per hour. The happy thought struck me to start the tender's engine to take the drag off my big boat. I had to adjust the speed three or four times to keep the 'Dink' from running ahead, as she makes about seven miles at full speed, and being fussy about my white paint, did not want to be bumped into, for I was in no hurry. I finally got her running slow enough to keep the tow-line slack, and during that entire trip of nearly seventy miles that little Brownie never missed a cough until I pulled her up alongside off Port Jefferson and threw the switch.

"Very truly yours,
"CHAS. L. CARSON."

Surface Propeller Patents.

Within the past month Albert Hickman has received the last acceptance—that of Austria—in the surface propeller patent applications throughout the world. The Viper Company informs us that these patents have now gone through in all countries, with their essential claim intact. Previous to the Austrian patent, the last one to be received was that of Germany, in which country the case was under discussion for something like two years.



A little 23 foot runabout, powered with a 12 H. P., two-cylinder Gray motor, which has made an increasingly good record for the past four seasons, as noted herewith.

with the result that Mr. Hickman was granted a basic patent in Germany, as in all other countries, on the surface propeller system.

Since the surface propeller patents were applied for, application has been made for patents covering the new principles involved in the Viper V-type hull.

Grays in England.

A splendid illustration of what a strong foothold some of the well-known American-made marine engines have gained in foreign countries is well illustrated in the event of the second annual cruise of the Guernsey Bailiwick Motor Boat Association, of Guernsey, Channel Islands, England.

This cruise took place on September 11th. Thirty-three boats entered the cruise, carrying about 250 passengers. Of the 33 entries 19 of the boats were equipped with well-known American-made marine engines; 14 of these 19 motors were Grays.

Red Wing "Thorobred."

The Red Wing "Thorobred" is the Red Wing Company's latest product in the way of a modern marine engine. It is a 4-cylinder, 4-cycle, developing 24-32 horsepower, and engine men who have examined it declare it will be one of the greatest sellers in the marine field during the coming year. The "Thorobred" is modern to the last detail and the Red Wing Company, by manufacturing them in large quantities, makes the price of \$250.00 for the motor, which is far below any price ever made on a similar motor in the past. The "Thorobred" is designed to drive an average good hull 20 miles an hour and is light enough for high speed work and still staunch enough for hard cruising service. It has aluminum base, silent gears, enclosed springs and push rods and is a very compact and beautiful power plant. We shall hope to describe the "Thorobred" in greater detail a little later on.

Wait, Van Blerck Agent.

There is probably no one in the motor boat game better known than "Jimmy" Wait, and his host of friends are not confined to the Chicago territory alone. He is a thorough-going engine and yacht salesman as his sales of high-grade engines, yachts and launches during the last few years only too well prove. Moreover, he is a thorough-going yachtman and knows a thing or two about engines and boats which makes his advice and suggestions, always offered to his customers with an eye single to their welfare, most acceptable. Mr. Wait has just accepted the position of Van Blerck agent in Chicago.

James M. Wait & Company have the best adapted and most complete motor and boat display rooms in Chicago. They are located at 1205 Michigan Avenue, close to the Illinois Central Railroad, right in the heart of the automobile centre.

New Grossman Factory.

After four years of steady growth, the Emil Grossman Company, known chiefly as the producers of Red Head



Habana, a 45 foot cruiser, powered with a 24 H. P., three cylinder Standard engine.



A little 23 foot runabout, powered with a 12 H. P., two-cylinder Gray motor, which has made an increasingly good record for the past four seasons, as noted herewith.



Mr. Van Blerck and Charles B. Page, vice-president and sales manager of the Van Blerck Motor Company, talking it all over.



Japanese fishing boat Tenjin Maru, powered with a 45 H. P. heavy duty Regal engine.

spark plugs, may be fairly said to have attained their stride as manufacturers.

On September 15, 1913, the New York and Detroit factories were merged in Model Factory No. 20, Bush Terminals, Brooklyn (New York City), occupying 30,400 square feet, which is two and one-half times the total floor space formerly occupied in New York and Detroit.

To give an idea of the immensity of the equipment, it took an army of 150 mechanics nearly two months to install the different departments in the factory and build stock bins and office partitions. The moving of the machinery and stock from New York and Detroit was accomplished over the Labor Day holidays, without serious interruption to shipping, stock having been prepared in advance. Eighty 8-ton trucks were pressed into service in transferring the New York factory, and four 80,000-pound box cars were required to move the Detroit factory.

Kermaths Abroad.

Kermath Manufacturing Co. have extended their agency in the past month into Alaska, having appointed the Union Iron Works, of Juneau, as their representatives in Southern Alaska, and a stock of motors and parts are en route at the present time to take care of the territory around Wrangell, Sitka, Treadwell, Douglas and Skagway.

Kermath's Exports.

Kermath Manufacturing Company, Detroit, Michigan, makers of Kermath motors, are devoting their energy to a great extent on the development of their foreign business, and report the following sales in the past week:

Three motors to Shanghai, China; 1 to Deest, Holland; 2 to Stockholm, Sweden; 4 to Hamburg, Germany; 5 to Christiania, Norway; making a total of 15 motors in one week.

Regal in Japan.

A Japanese fishing boat of Honolulu, Hawaii, equipped with a 45 h.p. heavy-duty Regal engine, is 61 feet long, 11½ feet beam, has 4½-foot draft and is capable of a speed of 12½ miles per hour.

She was built by Charles D. Walker, of Honolulu, for a Japanese fisherman, and the photograph shows the boat "Tenjin Maru" decorated for launching.

When a Japanese fishing boat is launched she has to be decorated with about a hundred flags, small and large. Some represent the Rising Sun, others have characters of good luck on them and the whole thing makes an unusually pretty launching. After the boat

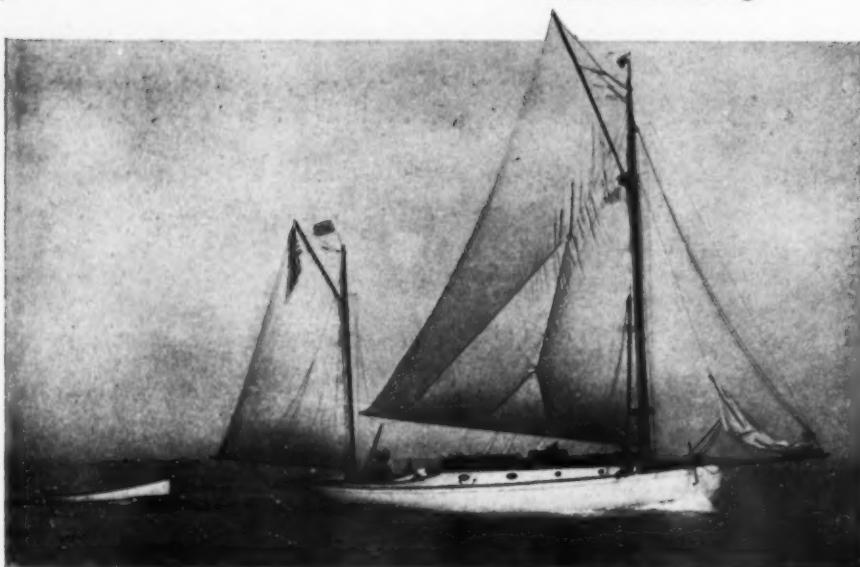
is in the water, the fishermen swarm the decks and start drinking Japanese Saki and singing. When this has progressed far enough, a sort of made-up fight takes place, resulting in the captain being thrown overboard to the huge delight of everybody. If he survives (which he always does), again takes the command and can throw all the others overboard, he will have good luck.

Perfex and W. & M. for Roosevelt.

The Roosevelt expedition to South America carried a full equipment of Perfex ignition, supplied by the Eastern Marine Motor Sales Co., who supplied engines and electrical equipment for the rift climbing boats to be used by members of the expedition where shallow streams are to be navigated. The boats of the Roosevelt outfit were also equipped with Wilmarth and Morman reversing propellers, the utility of which in the rivers of the South American continent, filled as they are with snags and sand bars, Colonel Roosevelt was quick to recognize. The expedition carries a full set of extra blades, so that if one blade is broken another can be quickly slipped in, thus saving the time that would be lost in adjusting a new propeller. The Wilmarth & Morman Co., of Grand Rapids, Mich., are issuing a new catalogue, which they distribute to all who may be interested.



Rose R. II a Brooklyn, N. Y., fishing boat, powered with an 85-100 H. P. heavy duty Buffalo engine.



Mashantun, a Boston 40-footer powered with a 20-35 four-cylinder Sterling.

Motor Boating on Paraguayan Rivers.

Motor boats are just coming into use in Paraguay, there being now 50 to 60 in Asuncion, and perhaps half a dozen in other places in the country. Consul Cornelius Ferris, Jr., suggests to American manufacturers who may be interested that they communicate with one of three hardware dealers on the subject, as they are in the way of importing goods from the United States.

Splitdorf Changes.

Important executive changes have been made in the recent process of incorporation of Splitdorf Electrical Company branch houses. The Splitdorf Electrical Company, of Detroit, is now incorporated with C. E. Breisford as president, H. J. Hinley as treasurer and manager, and W. J. Murray as secretary. The Splitdorf Electrical Company, of Chicago, has been incorporated with R. A. Preble as president and manager, and E. A. Kelley as secretary and treasurer.

Wolverines.

The Wolverine Motor Company, of Bridgeport, Conn., sends us an interesting little pamphlet telling something about a number of the boats that are equipped with Wolverine motors. Among these may be mentioned Esperanza, a deep sea-going yacht, 70 feet long with 17½-foot beam. She is owned at Easton, Md., has a speed of 8½ miles per hour. Her power plant is a 27 h.p. Wolverine, running on kerosene. Thelma is a fishing schooner, owned in Gloucester, powered with a 75



Tomboy II, powered with a 15 H. P. Ferro. She has a record of 7,000 miles without engine trouble.

h.p. Wolverine engine, running on kerosene. Lilian is a 65½-foot yacht, with 10½-foot beam. She is owned at Sandgate, England, and has made many strenuous trips across the channel and through the Binger Loch, the roughest part of the Rhine. This boat has a 30 h.p. Wolverine, running on kerosene. "Mary P. Ruth" is a 70-foot fishing schooner owned in Gloucester. Her 75 h.p. Wolverine is running on kerosene. Five horsepower Wolverines, they tell us, are very popular with a type of small fishing boat much used in New Foundland.

Silver Spray.

The tug boat Silver Spray, owned by the Campbell River Lumber Co., is an example of a type of work boat which has become quite common in the lumber industry. As her service naturally demands, she is built on sturdy lines and the 40-45 h.p. "Buffalo" heavy-duty engine, which has been recently installed, gives her ample power for the taxing work she is called upon to do, and also a speed of upwards of 9 miles. The Silver Spray is used in the waters adjacent to Blaine, Washington, where the Campbell River Lumber Co. has seven mills, and is now putting up another at a cost of \$150,000.00.

"Tomboy II."

"Tomboy II," a trunk cabin cruiser, 25 feet x 7 feet 6 inches, was built in 1911 and is powered with a 15 h.p. Ferro engine. Joe Boat, the owner, states that in the three seasons running he has cruised over 7,000 miles and has never had a minute of engine trouble nor spent a cent for repairs.

"Tomboy II" makes 9 miles per hour easy cruising speed, and is a familiar sight in Lake Erie ports.

Buffalo in Government Service.

The United States War Department has just placed an order for a 20-24 h.p. heavy-duty Buffalo engine, to be installed in the first of the boats which are to be used in connection with the work of dredging the Mississippi River and the Merrimac River, for which a large appropriation was passed by Congress some time ago.

The drawings of these boats have not yet been made public. They are said to include some points which will be of interest to work boat owners.



The great new plant of the Emil Grossman Mfg. Co., at Bush Terminals, Brooklyn, N. Y. A detailed notice of this plant appears in this section.

by the Leary Gasoline Engine Co., of Rochester, N. Y., seems a step in this direction in that it can use a fuel consisting of mixed gasoline and kerosene. Its ability to do so is entirely due to the twin-port system used in its construction. Two carburetors are used. The method adopted is that of piping one carburetor to the gasoline tank and the second to a kerosene tank, the former connection for use in starting, and the latter when the highest speed is desired. The gasoline adjustment is set to use one-third and the kerosene two-thirds, making a powerful and cheap fuel.

Each cylinder of a "Leary" has two intake ports and all motors are equipped with two carburetors, attached to independent intake manifolds and are placed one on each side of the motor. The fact that there are two intakes is not the only factor in this new fuel system, although it could not be accomplished without it. Each cylinder below the water jacket, has an exhaust ring which becomes very hot, so that it not only furnishes hot air to the carburetors, but gives a continuous heated passage for the gases from the carburetor to the spark, permitting kerosene to be used equally as well as gasoline. The operator has his choice of fuel, without a change in the motor.

Buffalo St. Louis Agent.

A. C. Houser, sales manager of the Buffalo Gasoline Motor Co., has announced the appointment of the E. B. Totten Machine Co., of 213 Chestnut Street, St. Louis, Mo., as sales agents for "Buffalo" engines. The Totten Machine Co. will handle all "Buffalo" engines in St. Louis and immediate vicinity, and will be in a position not only to demonstrate the engines, but to give prompt service in supplying repairs.

Gas Engine Brokerage Department.

The Gas Engine & Power Co., and Charles L. Seabury & Co., have recently added a brokerage department to their business. A large number of high-class yachts and launches are on their lists and they tell us that from the outlook their new department looks good.

Standards for Washington.

Of course every one knows what a keen lot the motor boatmen of Washington, D. C., are, and it is only natural as every facility for the sport is there in full measure. Two of the Washington clubs—the Capitol Yacht Club and the National Yacht Club—which are keen rivals, recently held a series of inter-club races.

Judge Strider, with his cruiser "Habana," beat the fleet, with the exception of Mr. Portner's yacht. The beating of this boat was not to be expected as she is a very narrow speedy type of boat, with a 60 h.p. engine. The "Habana," (a picture of which appears on page 95), is a 45 x 10-foot boat, equipped with a 24 h.p., three-cylinder, 6-inch bore, 8-inch stroke Standard engine. Judge Strider is quite proud of the achievement of trimming the others, as several of them were higher powered than his boat.

Rose R. II.

Rose R. II is a 64 footer, owned by Captain Bus Rau, 151 Frost Street, Brooklyn, N. Y. The boat has a beam of 17½ feet and is of 30 tons burden. She is equipped with an 85-100 h.p. heavy-duty "Buffalo" engine and is used for taking fishing parties out to the banks. The boat docks at Messenger's Dock, Canarsie. The Buffalo people tell us that Rose R. II has done much to spread the fame of their engine among the fishermen she takes out.

Anderson's Jacksonville Agents.

The Anderson Engine Company, of Chicago, writes us that it has just completed arrangements with Burroughs and McMeekin, foot of Ocean Street, Jacksonville, Florida, to handle the Anderson lines in Jacksonville and adjacent territory.

Sterling to Advance Prices?

The following is an extract from a letter recently sent to all Sterling engine dealers:

"All models are subject to an advance in price January 1, 1914.

"It looks very much to the writer as though the above advance will be made, judging from the prices we are now paying for labor and raw materials. Just what advance is going to be necessary we are unable to state at the present time, as we must first get a complete record of the cost of our different machines under the present working conditions.

"The writer would urge, however, that you take this matter up with all your prospects and close up as many orders as you possibly can between now and the first of the year, in order to get them in at the present prices. This, we know, your customers will appreciate, and it will also give you a good wedge for calling on your prospective customers, talking with them and getting their orders placed early."

New Bosch Switch.

The Bosch News for October contains an interesting article on the new Bosch Press Button Key Switch, for the use of the who desire a positive method of short-circuiting their magnets. The device is generally installed on the dashboard of the boat, but if desired, it can be located on the floor where a slight pressure of the foot will short-circuit the magnets.

Scripts Export Office.

The Scripts Motor Company, inform us that owing to the splendid increase in their foreign business, they have found it necessary to open an export office at 17 Battery Place, New York City.

Leary Fuel.

In these days of high cost of gasoline and all other necessities of life, it is refreshing to note methods of reducing running bills. The Leary engine, manufactured

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RACING.

Mar. 30—Apr. 4, St. Augustine, Fla., speed boat races.

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Jan. 31—Feb. 7, New York Motor Boat Show.
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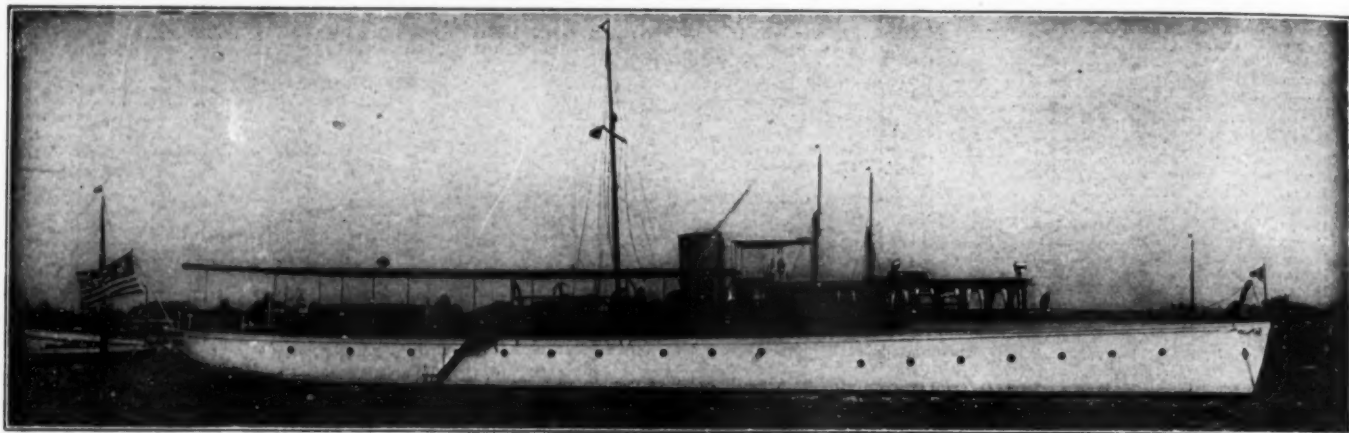
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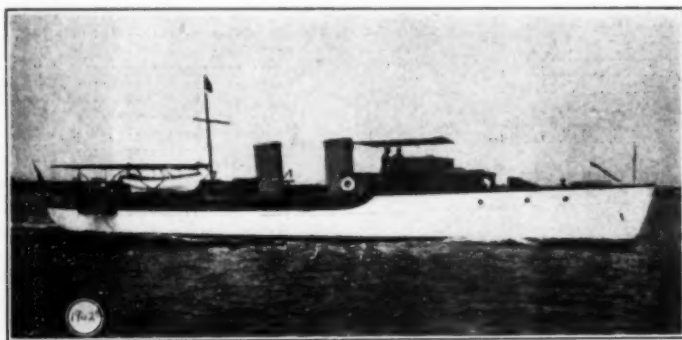
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We have a complete list of all steam and power yachts, auxiliaries and houseboats available FOR SALE and CHARTER. A few are shown on this page. Plans, photographs and full particulars mailed on request

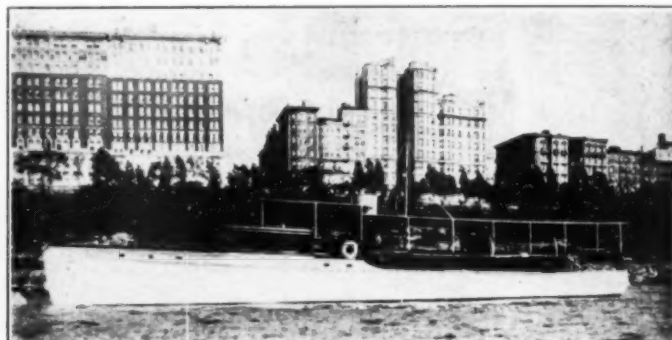


No. 885.—For Sale or Charter.—Exceptionally handsome, fast, steel, twin-screw 18 miles; two 300 H. P. Craig motors, three double staterooms, main and dining saloon the most desirable proposition ever offered in a large gasoline yacht. Apply to Cox &

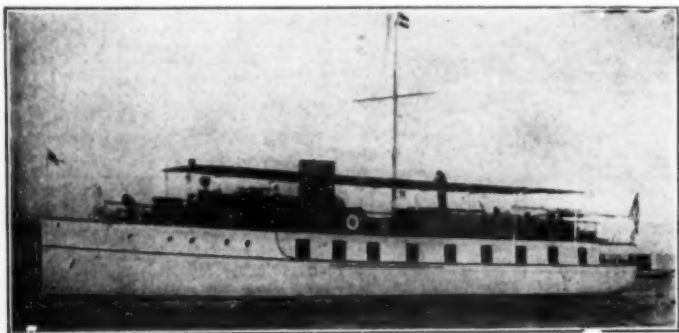
Stevens, 15 William St., New York.



No. 1942.—For Sale.—Exceptionally attractive twin-screw power yacht; 90 x 14 x 4.6 ft. Built 1912. Speed 13-15 miles. Accommodations include dining saloon and galley forward; two double staterooms; bathroom and extra toilet room aft. In first-class condition. Cox & Stevens, 15 William St., New York.



No. 2335.—For Sale.—Practically new twin-screw cruising power yacht; 83 x 13.6 x 3.6 ft. Launched last spring. Speed 14 miles. Two 6-cyl. 20th Century motors. Two staterooms, large main and dining saloons, bath, etc. All conveniences. Cox & Stevens, 15 William St., New York.



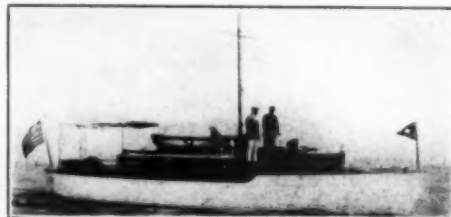
No. 1662.—For Sale or Charter.—Modern twin-screw power houseboat, 50 x 17 x 3.5 ft. Built 1911. Speed 10-12 miles. Four staterooms, large saloon, two bathrooms, electric lights, etc. Price attractive. Cox & Stevens, 15 William St., New York. Please mention MOTOR BOATING.



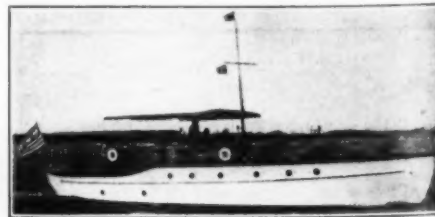
No. 2134.—Excellent Bargain.—Up-to-date gasoline cruiser; 71 x 12.3 x 3.5 ft. Built 1912. Speed, 13 miles; two 20th Century motors. Dining saloon and galley forward; two staterooms, bathroom, etc., aft. Cox & Stevens, 15 William Street, New York.



No. 429.—For Sale.—Attractive power yacht; 68 x 12.3 ft. x 4 ft. Built in best manner by well known firm. Speed 12-13 miles; 50-60 H. P. Standard. Handsomely finished and furnished. Price low. Cox & Stevens, 15 William St., New York. Please mention MOTOR BOATING.



No. 2419.—For Sale.—Bridge deck cruiser; 45 x 9 ft. 6 in. beam. Speed 10 miles; 18-24 H. P. Standard motor. Double stateroom, large saloon, toilet room, etc. Price low. Cox & Stevens, 15 William St., New York.



No. 1457.—For Sale or Charter.—Raised deck cruiser; 60 x 12.6 x 4.6 ft. Built 1911 in very substantial manner. Speed 11-12 miles; 40-50 H. P. 6-cyl. Standard. Two staterooms, large saloon, etc. Low price. Cox & Stevens, 15 William St., New York.

FRANK BOWNE JONES, Yacht Agent

29 Broadway, New York

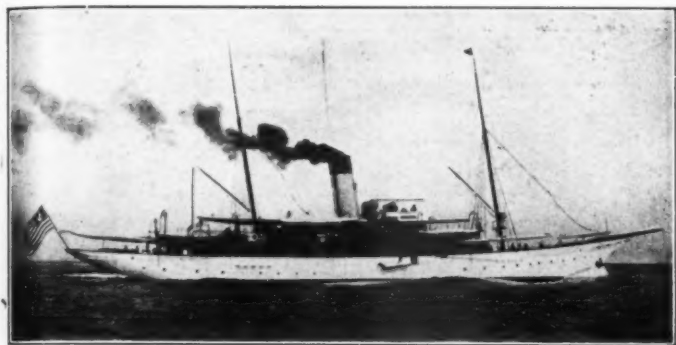
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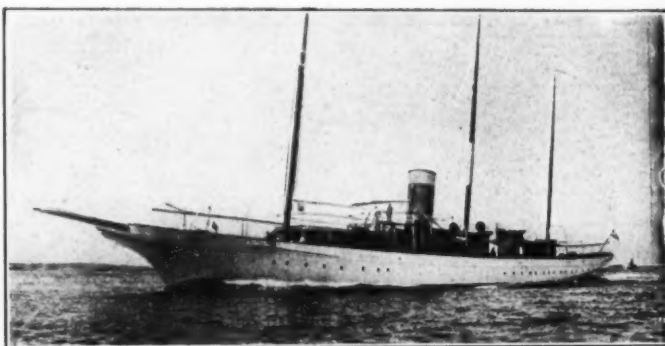
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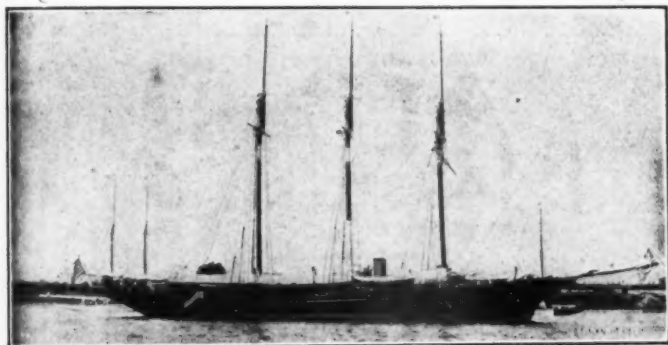
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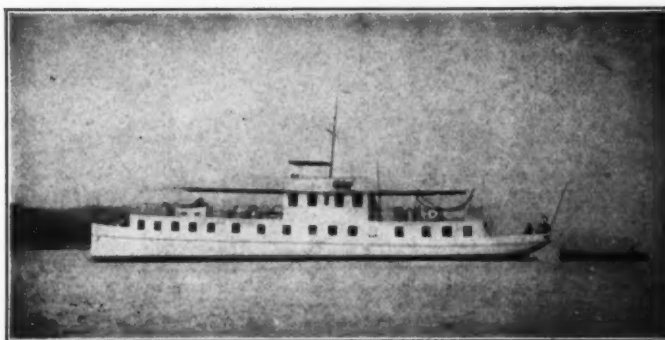
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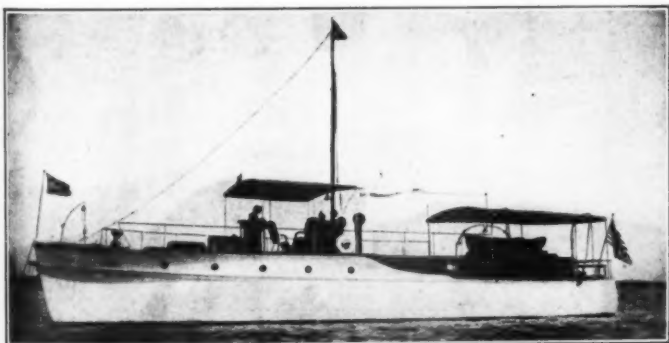
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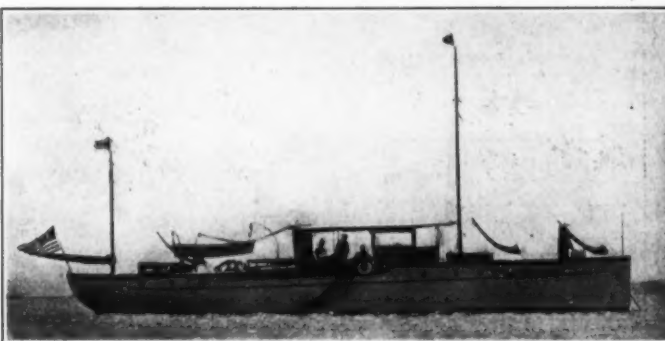
No. 5133.—Finest steam auxiliary afloat; good as new. Length 200 ft.
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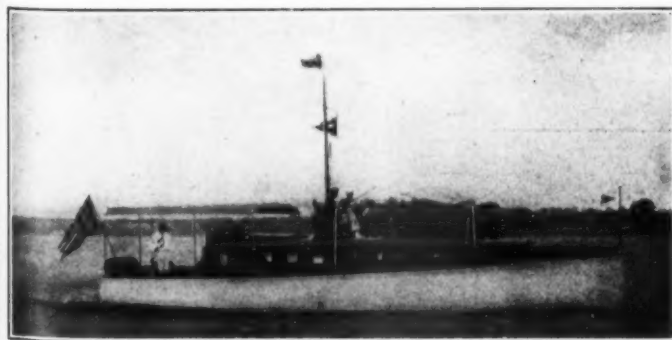
No. 5831.—110 ft. seagoing house yacht; speed 12 miles an hour; exceptional accommodations. Sale or charter.
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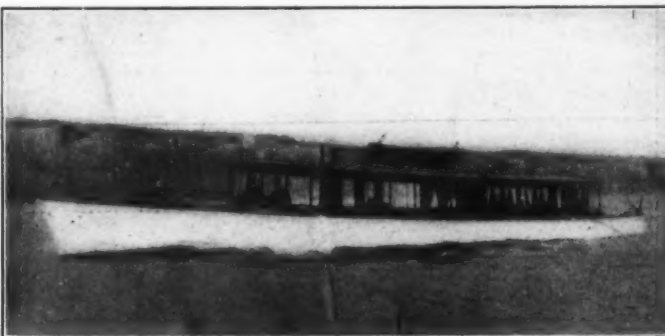
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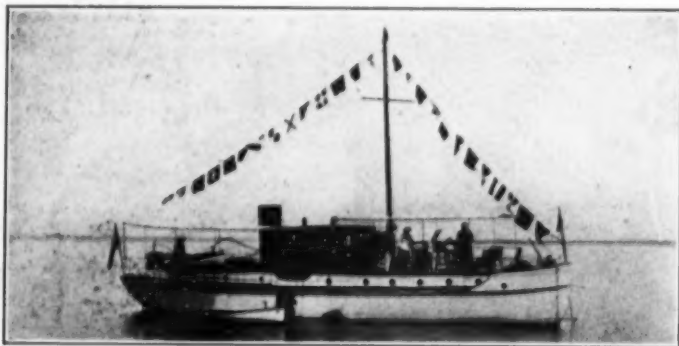
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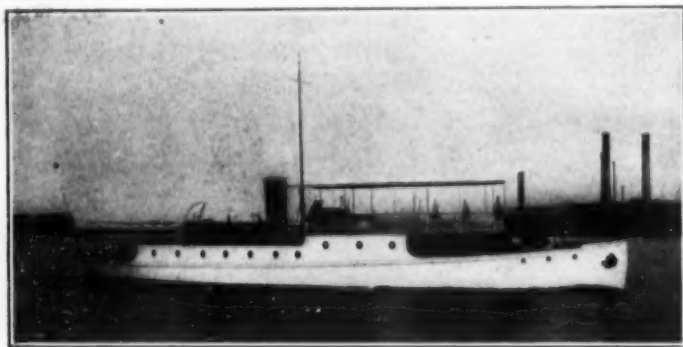
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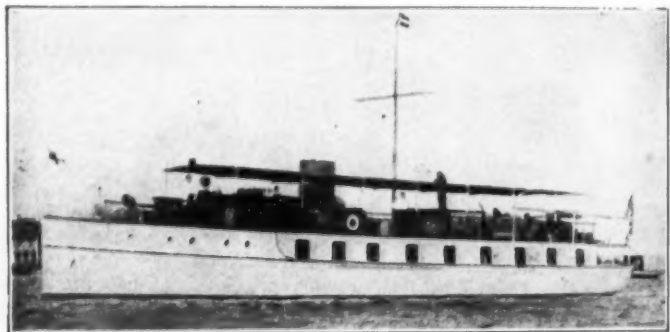
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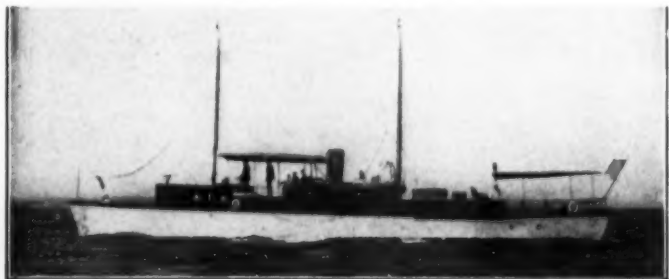
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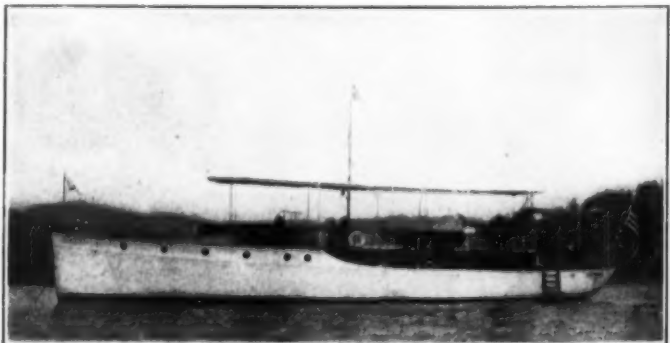
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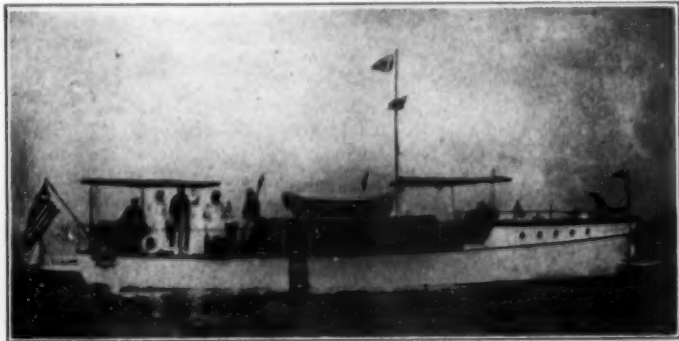
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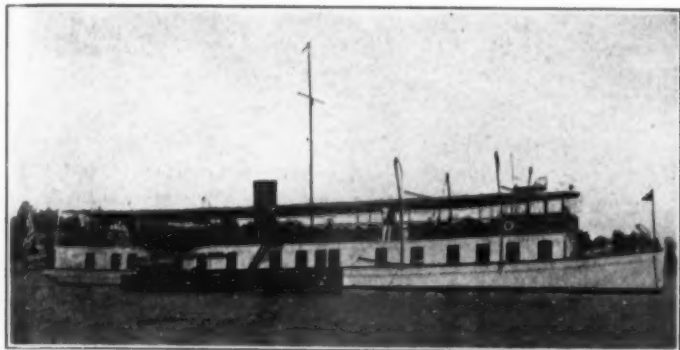
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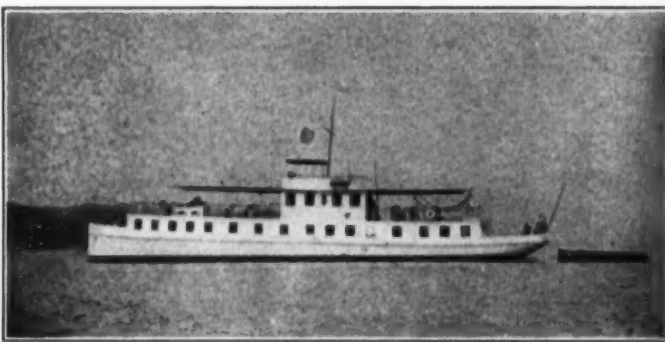
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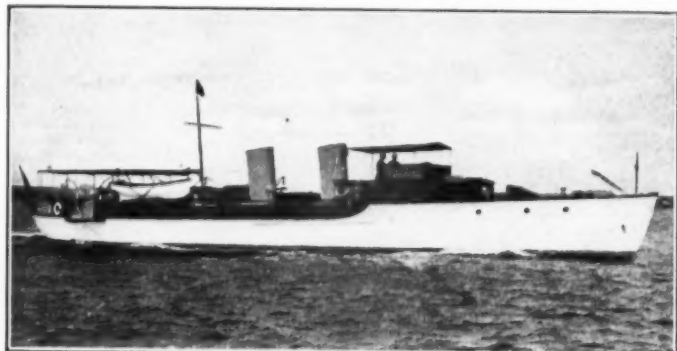
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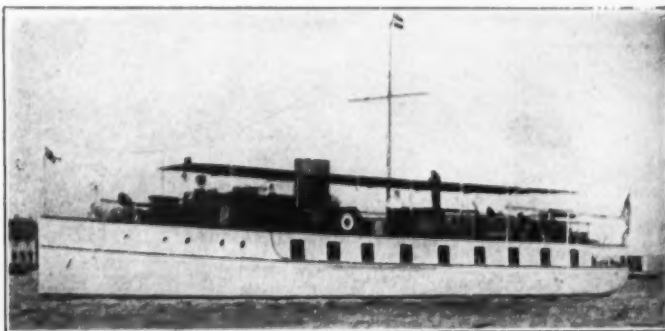
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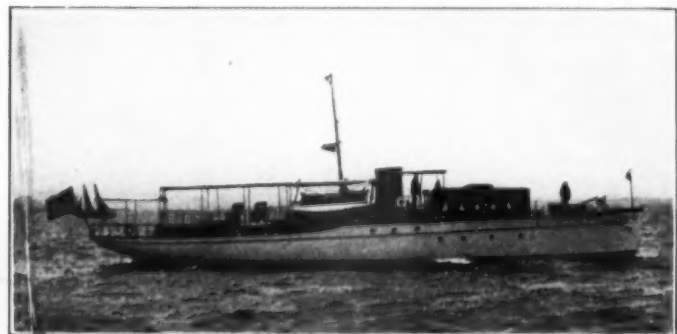
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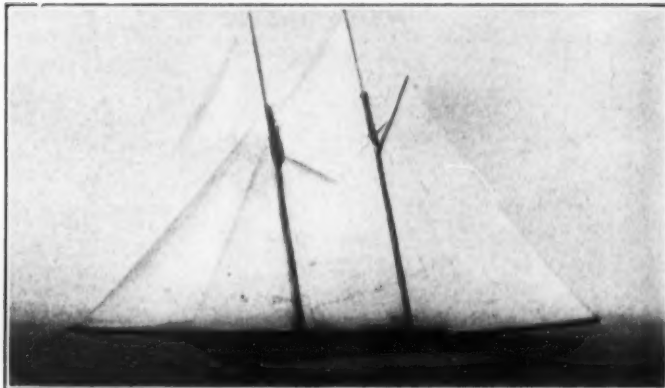
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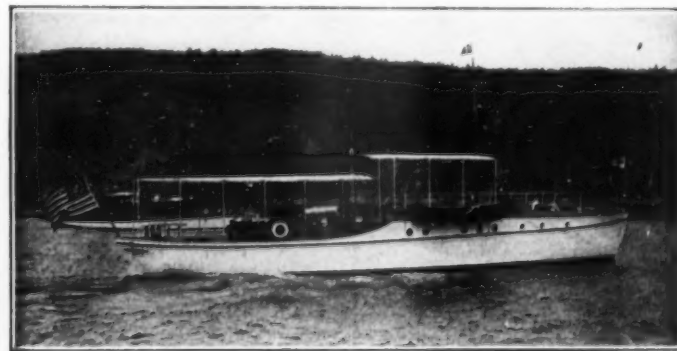
No. 1865.—Combination cruiser and houseboat, 90 ft. x 17 ft. x 3 ft. 4 in.; twin-screw; very able and nicely appointed.



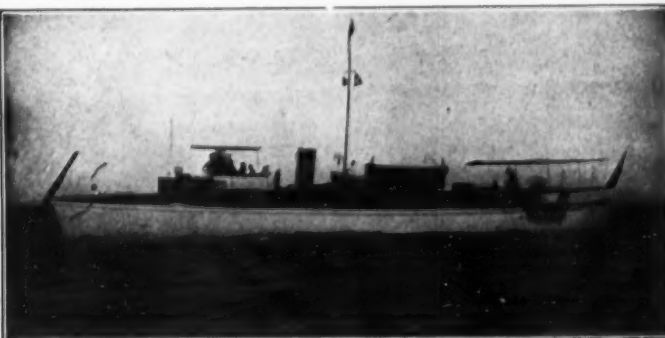
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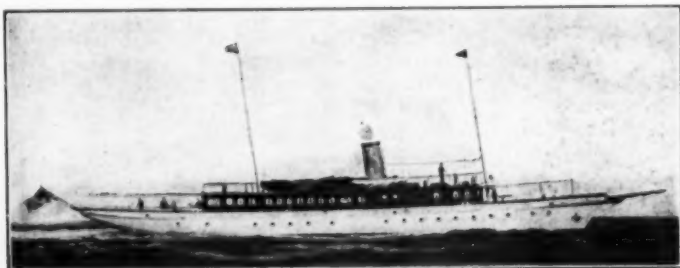
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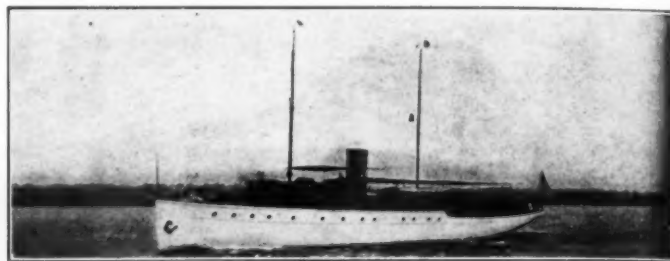
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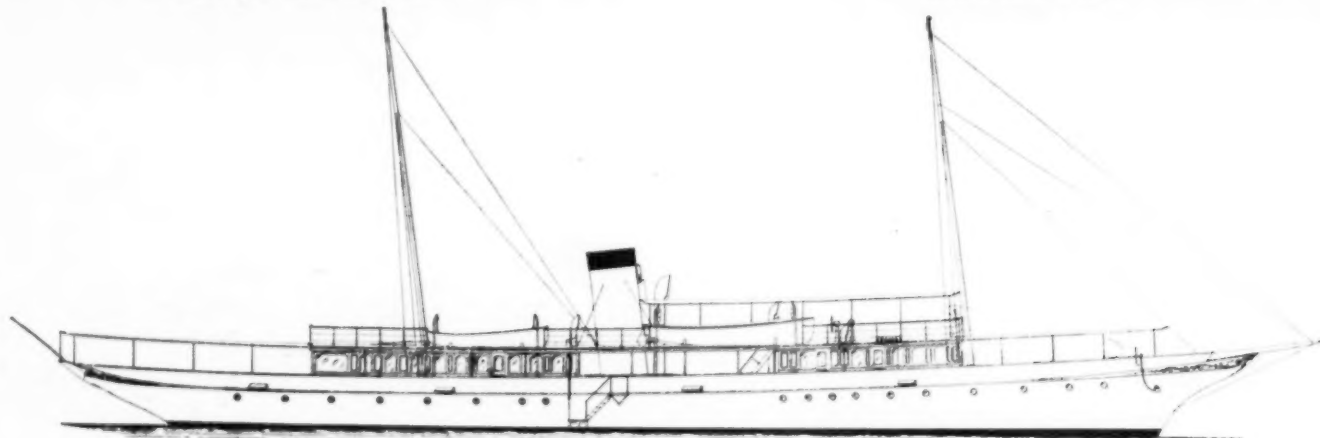
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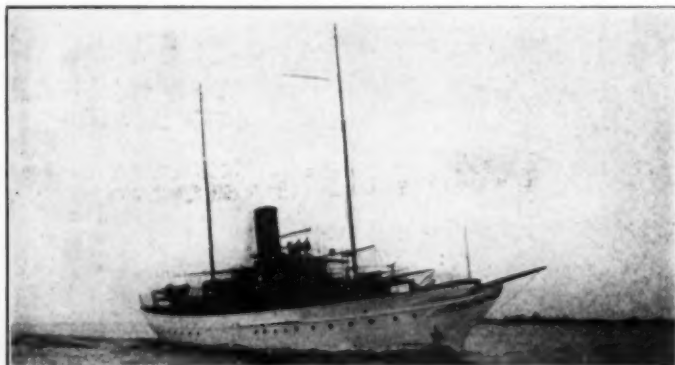
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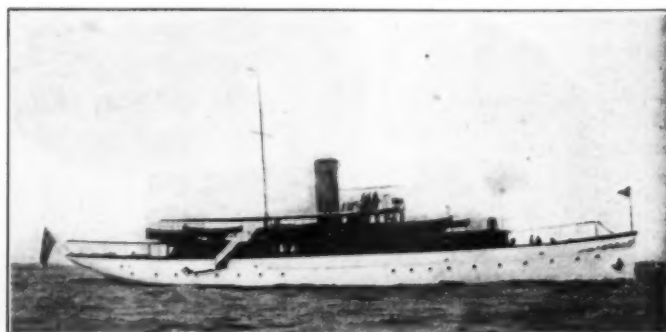
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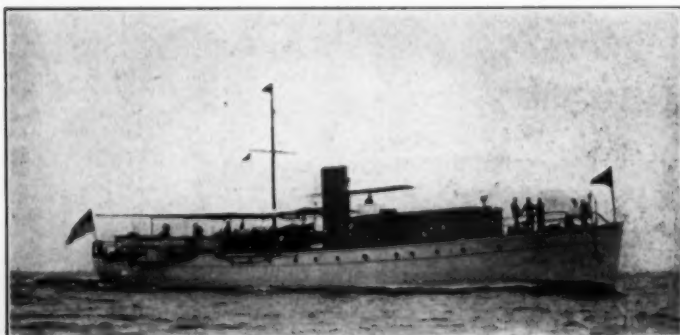
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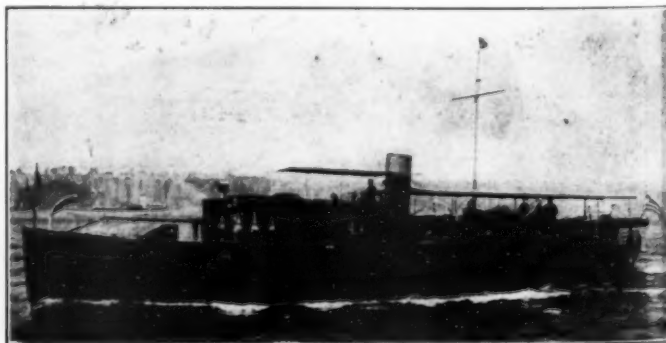
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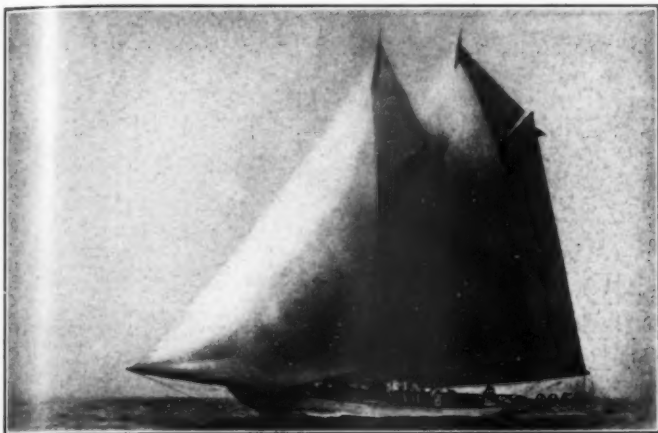
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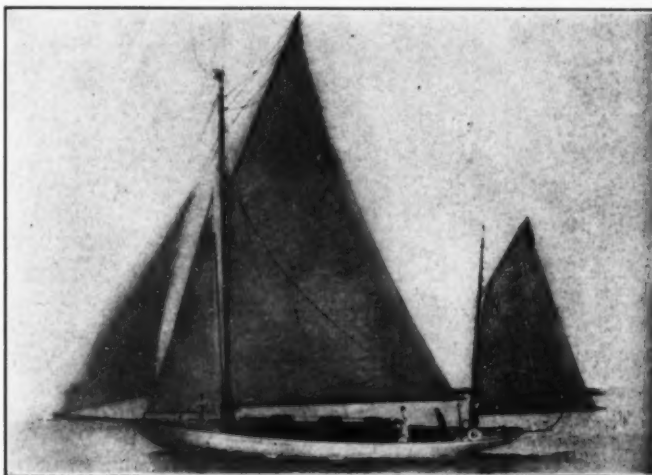
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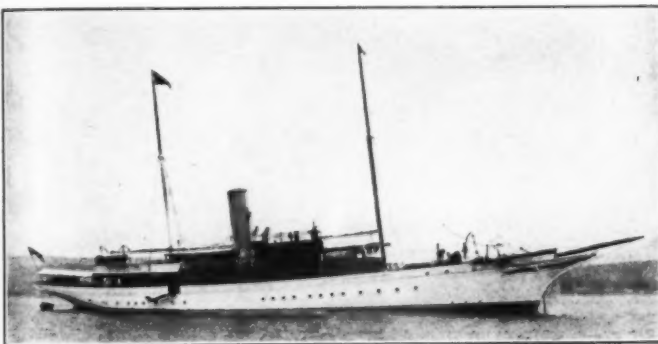
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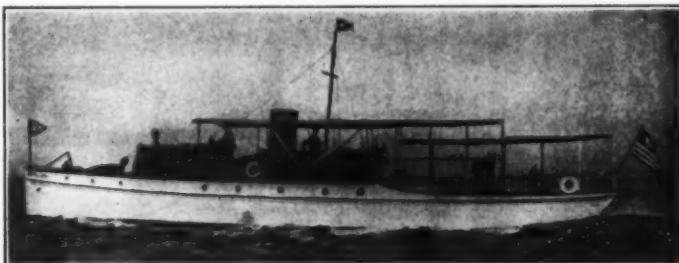
No. 2955.—Bargain—Auxiliary keel schooner, Cary-Smith design, 95 x 68 x 20 ft. 6 in. x 10 ft.; 75 H. P. Globe engine; electric light plant; good accommodations; fast sailer.



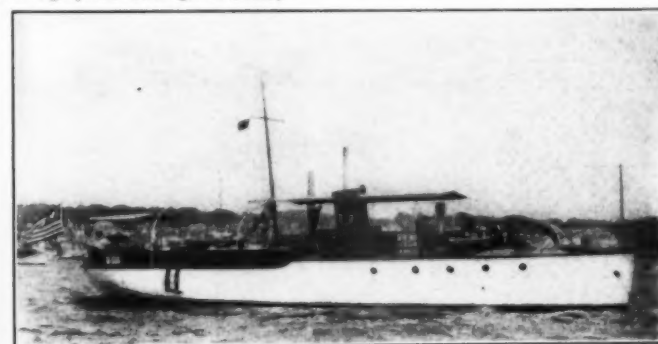
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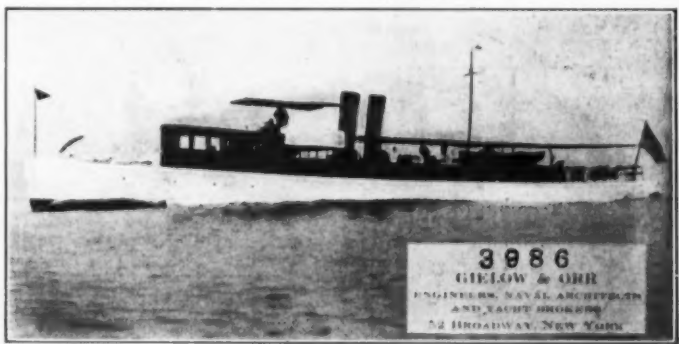
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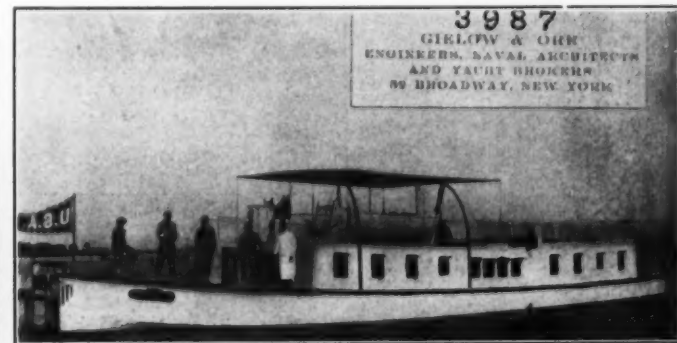
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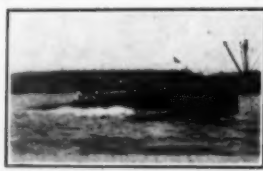
No. 3969.—Sale—Twin-screw motor yacht, 107 x 18 ft. 3 in. x 5 ft. 3 in.; built 1912; Standard engines; very roomy; fine sea boat; large deck space; 11 to 12 knots.



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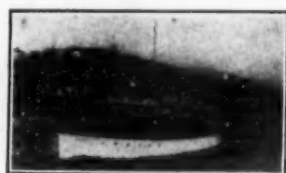
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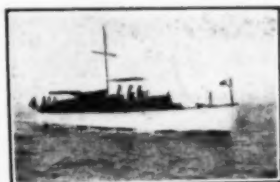
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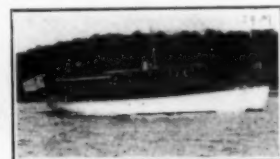
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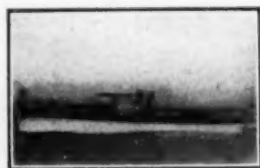
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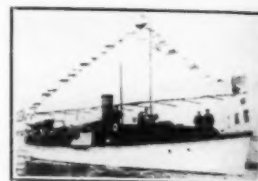
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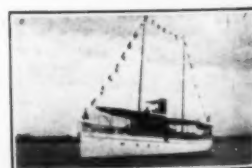
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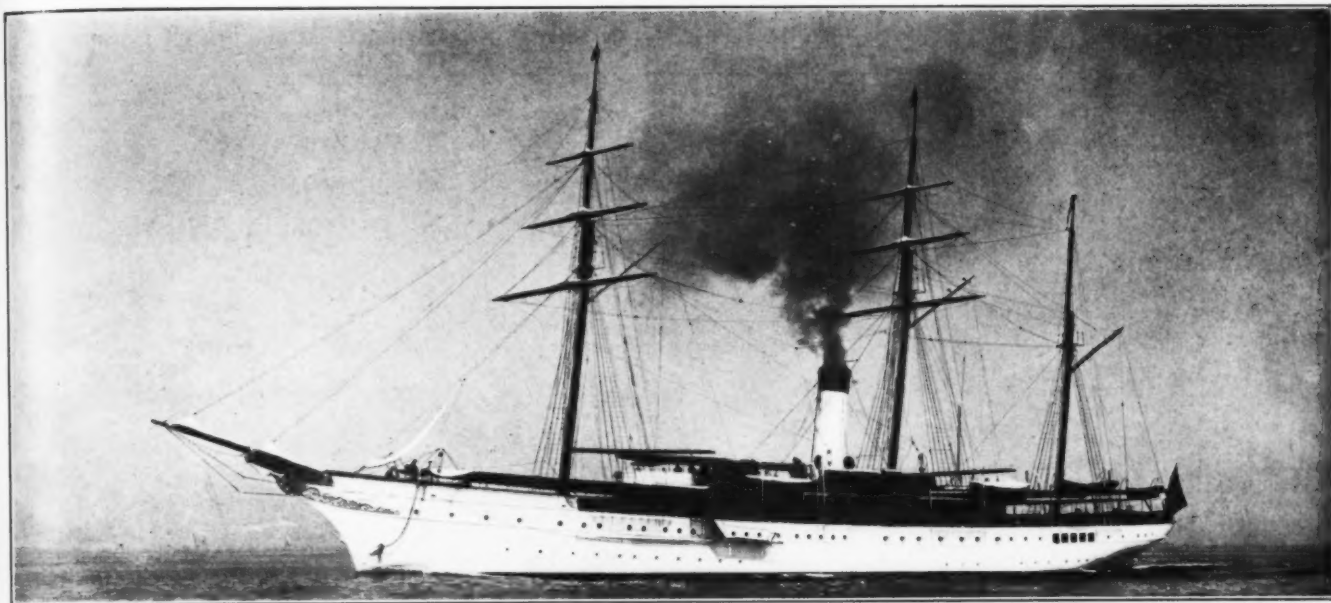
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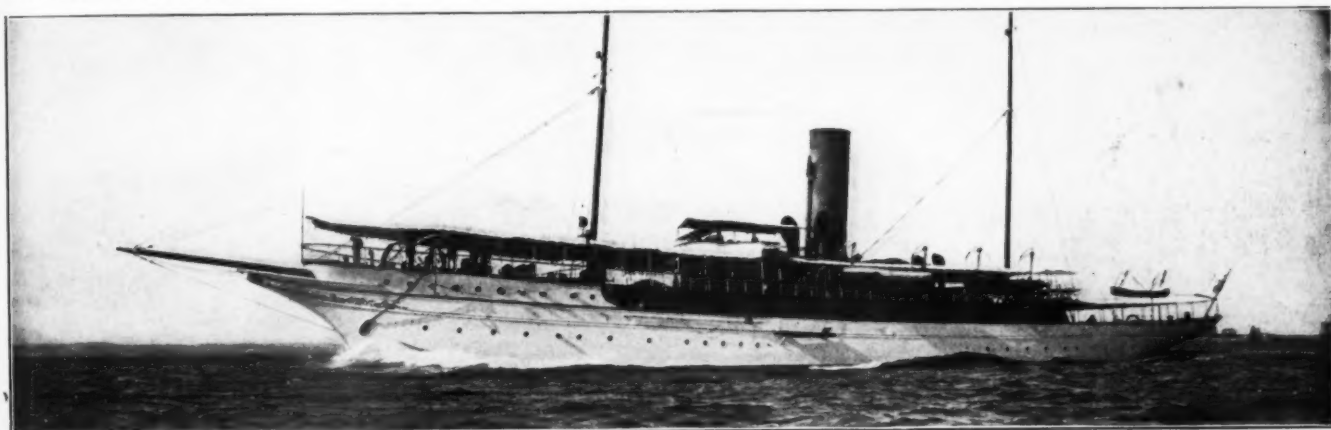


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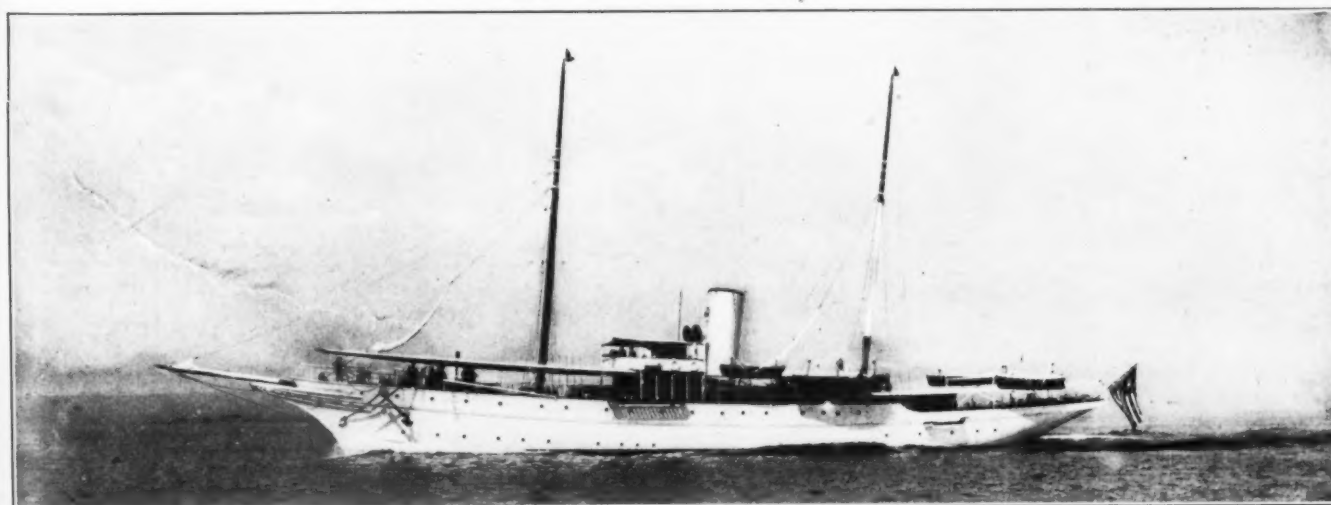
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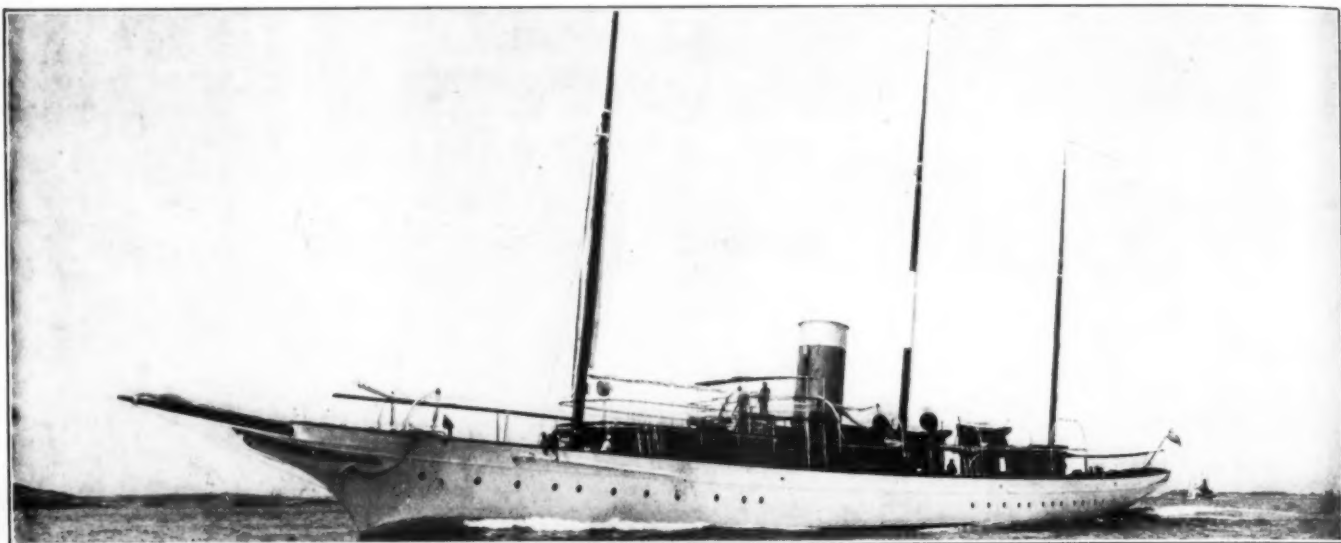
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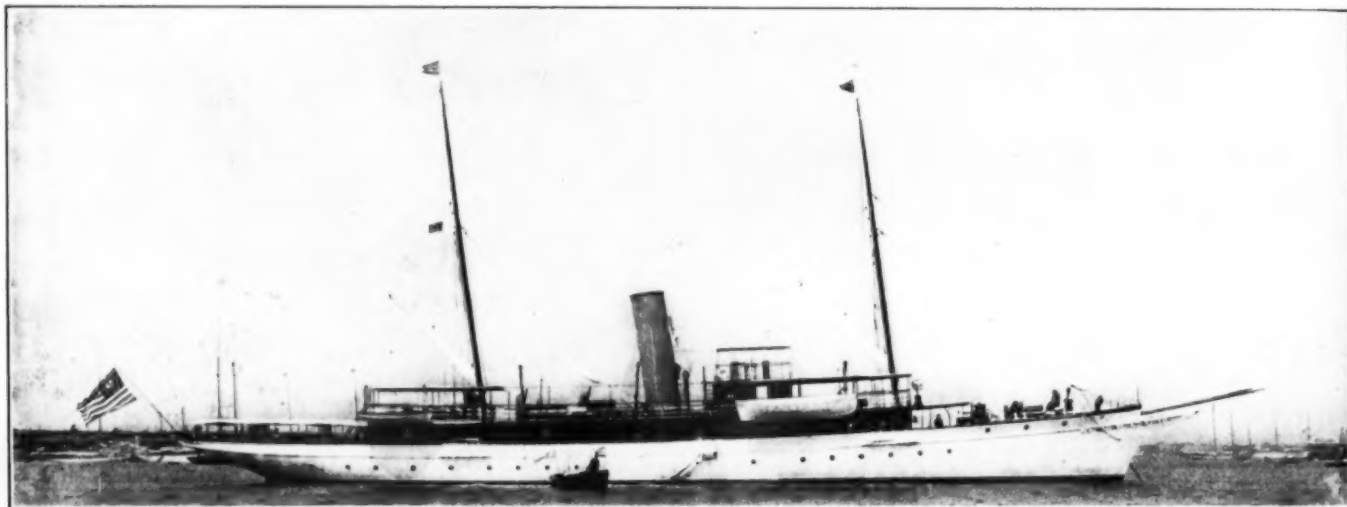
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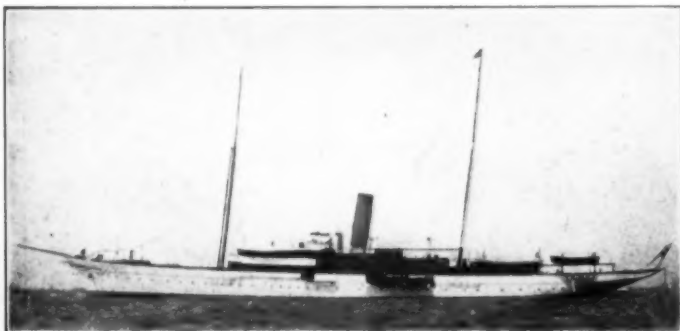
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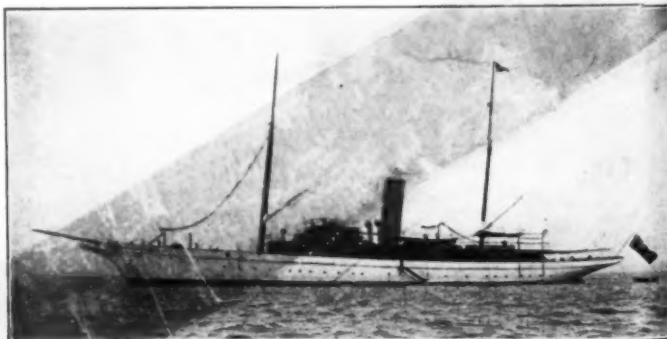
7464.—227 x 192 x 24.5 x 10. Twin Screw. Steel. 8 staterooms and 4 baths. Speed 21 miles. New boilers.



5414.—Steel. 200 x 165 x 26 x 13. American built ocean cruiser. Speed 11 knots. 10 staterooms and 4 baths. Cruised foreign waters extensively. Offered by Estate. Available for Charter.



B1.—243 ft. B. P. Steel Ocean Cruiser. British build. Classed 100 At Lloyd's. 8 staterooms; 5 baths. Triple engine; Scotch boiler. Speed 14 knots. Can be chartered. Free of American tax.



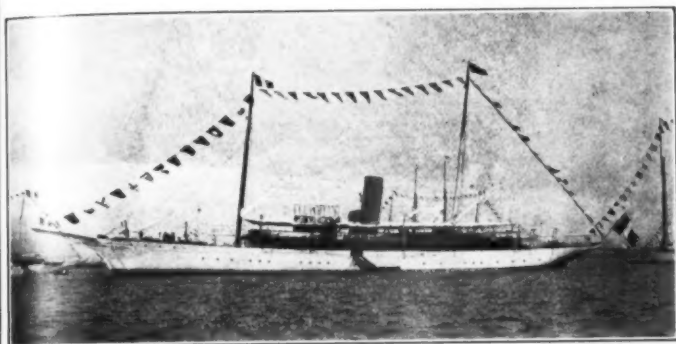
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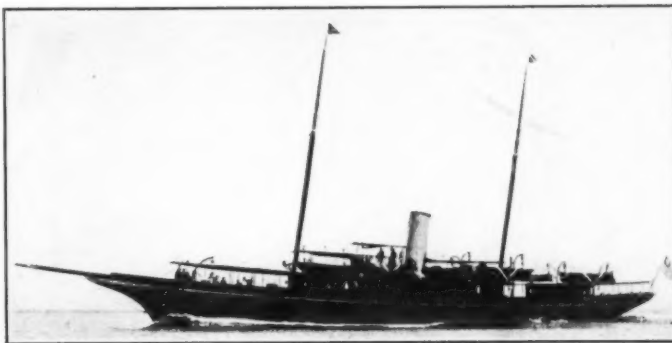
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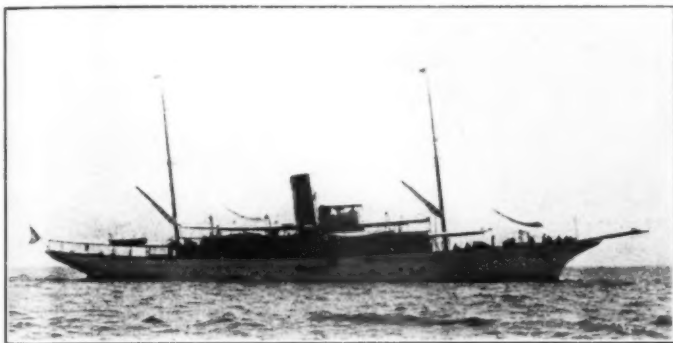
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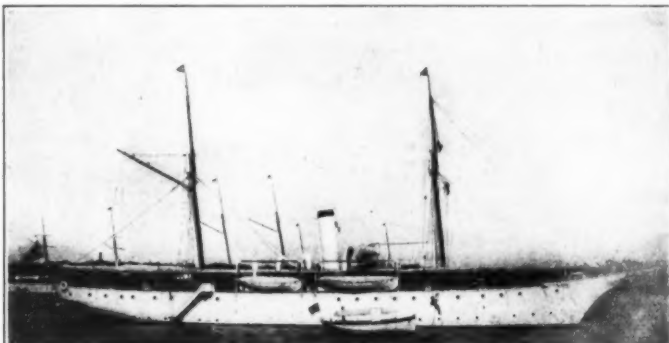
B. 3.—205 B. P. Steel. English build. Classed 100 A-1 Lloyds. 10 staterooms, berth 14. 5 baths. Triple engine; Scotch boiler. Speed 14 knots. Very able sea boat. Free of American tax.



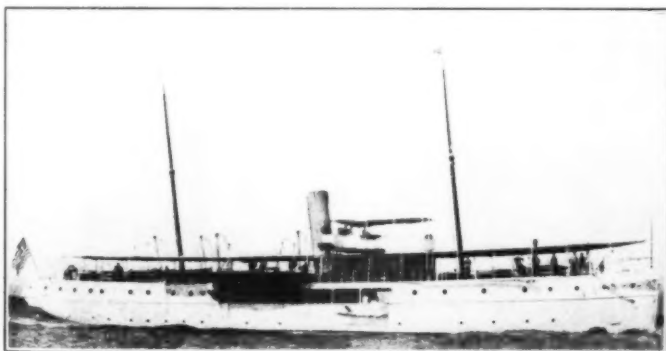
7052.—200 x 164 x 24.10 x 11 1/4.—Steel. Twin Screw Sea-Going Cruiser. Designed by J. Beaver-Webb. Fine accommodations. Economically maintained. Cruised Atlantic coast extensively.



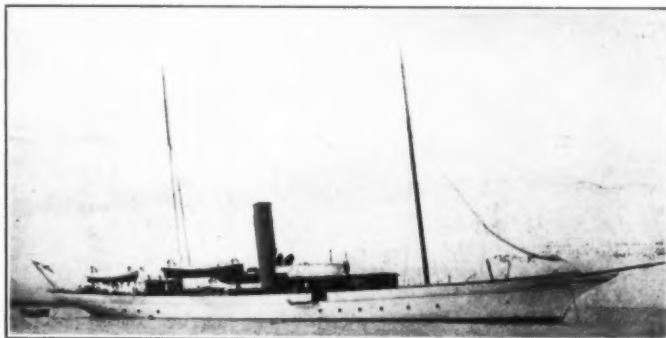
7168.—194 x 163 x 25 x 13. Steel. Ocean-Going Cruiser. English build. 8 staterooms, berth 12. 5 bath rooms. All modern conveniences. Triple engine; Scotch boiler; speed 13 1/2 miles. Free of American tax.



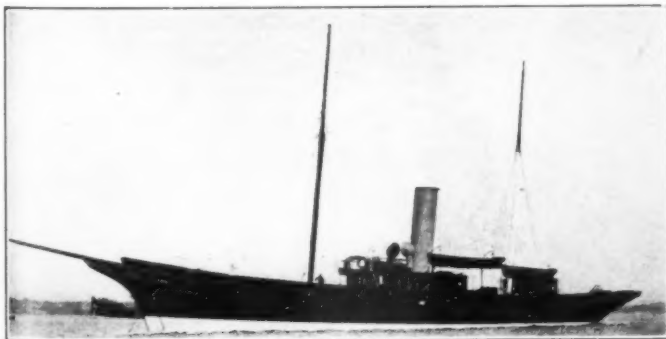
5094.—196 x 135 x 33 1/2 x 11 1/4. Steel. Double deck. Ocean cruiser. 12 staterooms. 7 baths. Speed 13 knots. Recently completed European and Asiatic cruise. Exceptionally able sea boat.



6037.—176 x 160 x 24.7 x 11. Steel. 9 staterooms. 4 baths. Speed 13 miles. Economically maintained. Suitable auxiliary naval vessel. Cruised extensively Atlantic coast.



B. 4.—144 (B. P.) x 19 x 11.8. Steel. English build. 6 staterooms. 2 baths. Triple engine. Scotch boiler. Speed 11 1/4 knots. Coal capacity 68 tons. Excellent sea cruiser. Classed 100 A-1 Lloyds. Free of American tax.



B. 5.—160.5 (B. P.) x 22 x 11. Steel. English build. Classed 100 A-1 Lloyds. Triple engine. Scotch boiler. Speed 12 1/2 knots. Coal capacity 65 tons. Fine seaboat. Free of American tax.



B. 6.—146 (B. P.) x 21 x 11 1/4. Iron. English build. Classed 100 A-1 Lloyds. 6 staterooms; bath. All modern conveniences. Coal capacity 40 tons. Speed 12 knots. Economically maintained. Free of American tax.

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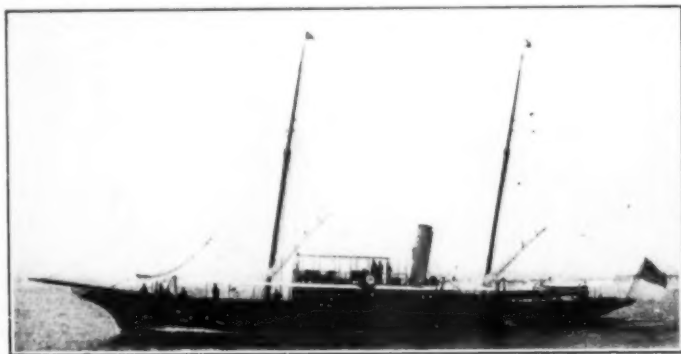
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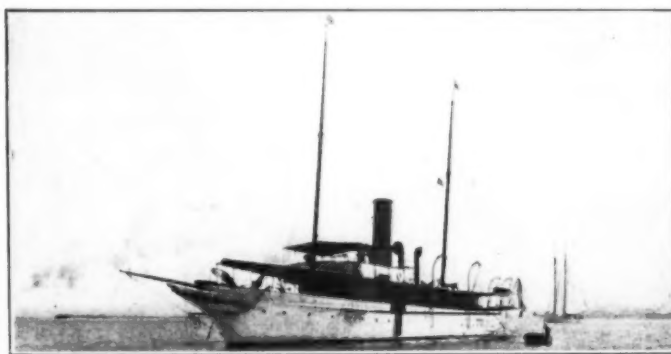
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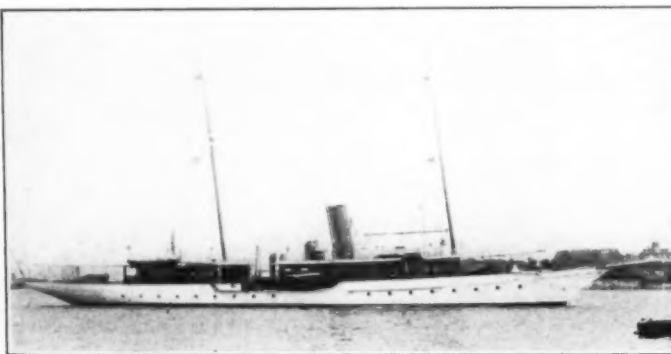
B. 7.—165 (B. P.) x 22 x 12.3. Steel. English build. 8 staterooms. 4 bath rooms. Triple engine. Scotch boiler. Speed 12 knots. Coal capacity 85 tons. Consumption 7 tons 24 hours. Classed 100 A-1 Lloyds. Free of American tax.



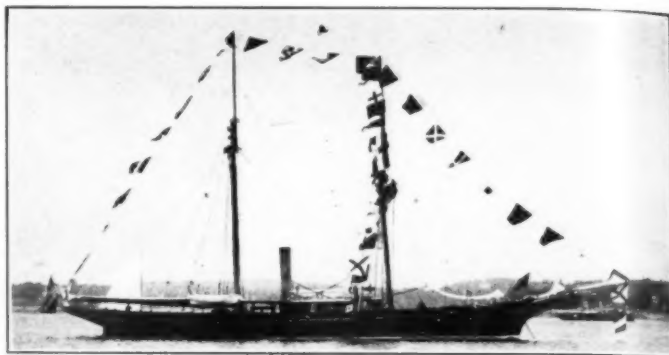
5841.—150 x 135 x 19.7 x 10.7. Steel. Ocean Cruiser. English build. 7 staterooms. 3 baths. Large cruising radius. Recently passed Lloyd's Survey 100 A-1.



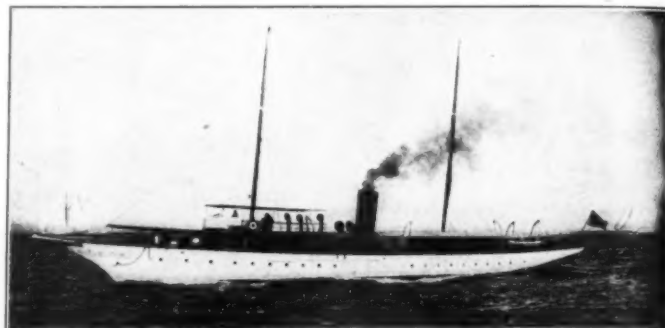
7449.—168 x 132½ x 21.8 x 10. Steel. 6 staterooms. 2 baths. Speed 15 knots. Magnificently appointed.



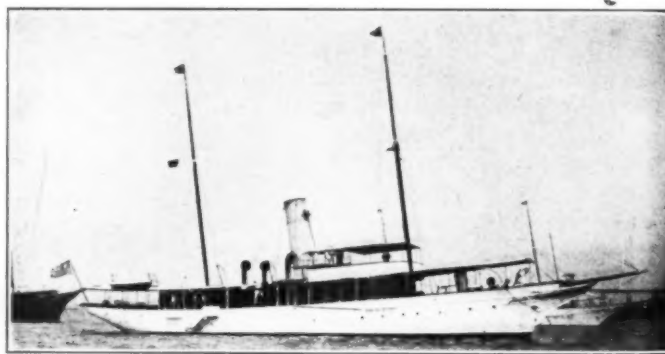
7100.—153 x 123 x 17½ x 7.9. Steel. Coast Cruiser. Speed 21 miles. 5 staterooms. All modern appointments. Perfect condition.



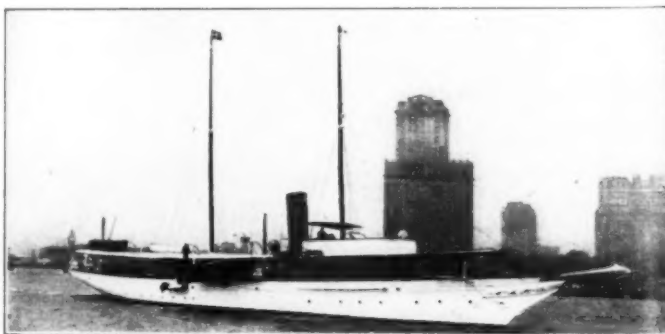
6266.—144 x 126 x 23 x 13. Steel. English build. Auxiliary brig. 6 staterooms. Cruised foreign waters extensively. Very able sea boat.



6467.—170 x 138 x 23.7 x 10. Steel. Coast Cruiser. 7 staterooms. 4 baths. All modern conveniences. Speed 16 knots. Cost \$140,000. Offered at less than half.



7073.—162 x 131 x 21 x 9½. Steel. Coast Cruiser. Exceptionally fine boat. 6 staterooms. 2 baths. Elegant appointments.



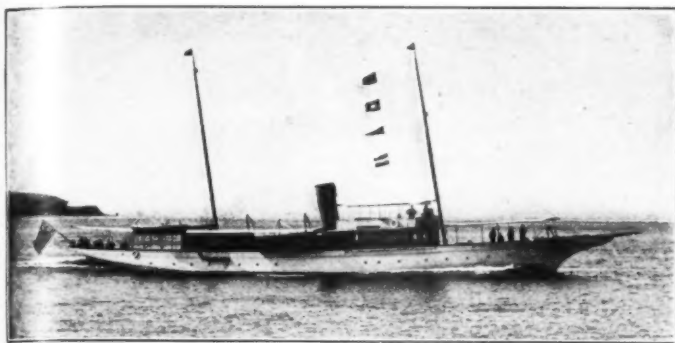
5753.—145 x 117 x 18 x 8½. Coast Cruiser. Speed 16 miles. 5 staterooms. 2 saloons. New boiler. First class condition.

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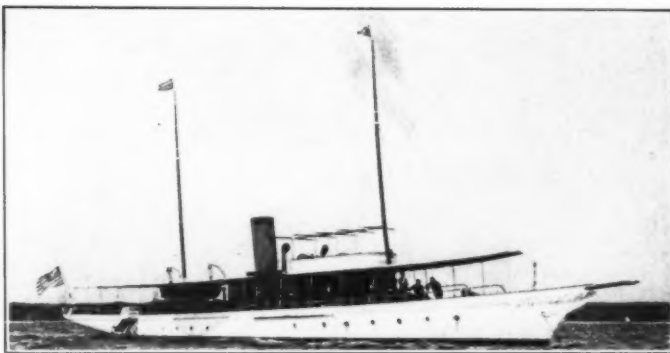
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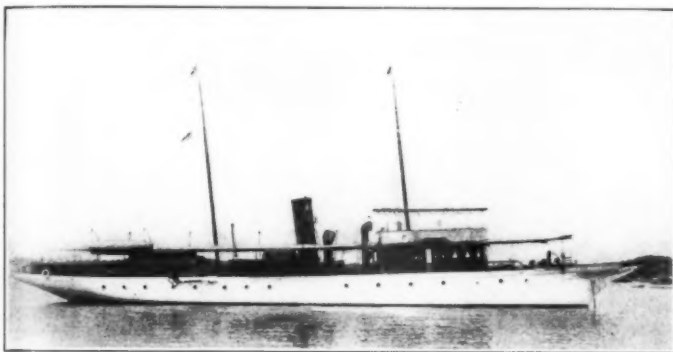
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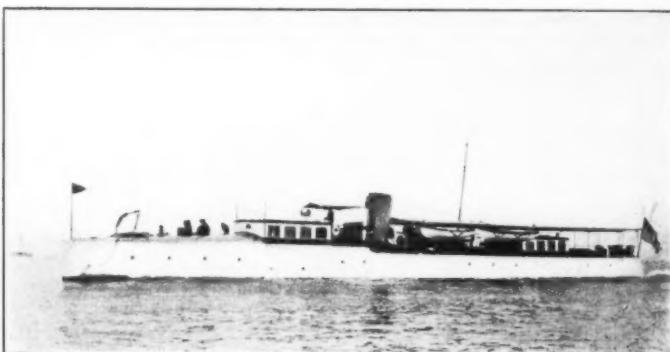
7144.—145 x 117 x 17 x 6.10. Steel. Coast Cruiser. Speed 14½ miles. 4 staterooms. Bath. All modern conveniences. Whole outfit in first class condition.



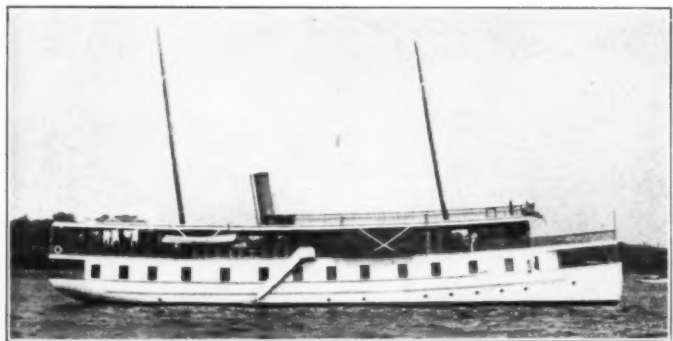
2697.—143 x 118 x 16 x 6.3. Steel. 5 staterooms. 2 saloons. Speed 16 miles. Has record 20.5 miles. Over \$25,000 recently spent for permanencies.



6472.—135 x 110 x 18 x 7.3. Coast Cruiser. 5 staterooms. Speed 13 miles. Quarters beautiful hand carvings and tapestries. Economically maintained.



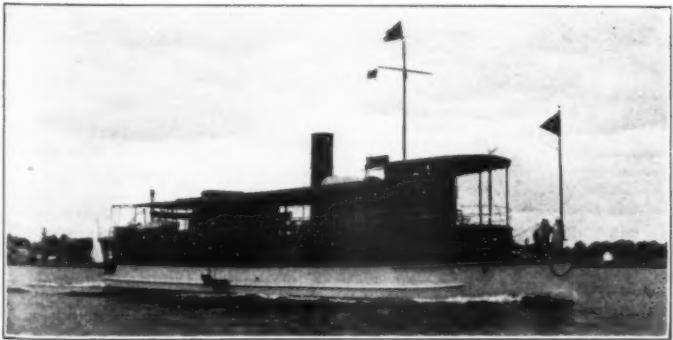
5471.—135 x 16 x 4.10. Coast Cruiser. Speed 17 knots. 4 staterooms. 2 saloons. Magnificently appointed.



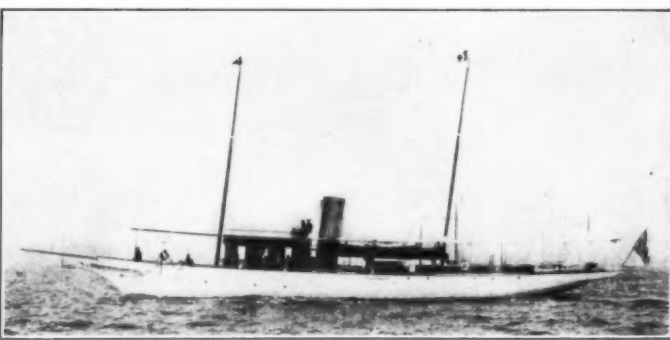
6861.—125 x 30 x 6. Steel. Twin Screw Coast Cruiser. 7 staterooms. 3 baths. Two triple engines. Almy boiler. Speed 10½ knots. All modern conveniences—music and smoking rooms, laundry, etc. Excellent seaboat and very comfortable.



7481.—114 x 13.5 x 14.3 x 6.8. Steel. Lawley Coast Cruiser. Highest construction; teak finish. 2 staterooms. Smoking room. Deck dining saloon. Bath. Speed 12 knots. Exceptionally complete.



5346.—114 x 18 x 3½. Steel. Twin Screw Shoal Draught Cruiser. Tunnel stern. 4 staterooms; large drawing room with 2 extension couches. Brass bedsteads in each room. 2 baths and extra toilet. All modern conveniences. 450 H. P. triple engine; speed 12 knots. Cruised extensively Atlantic coast. Cost \$68,000. Sell low.

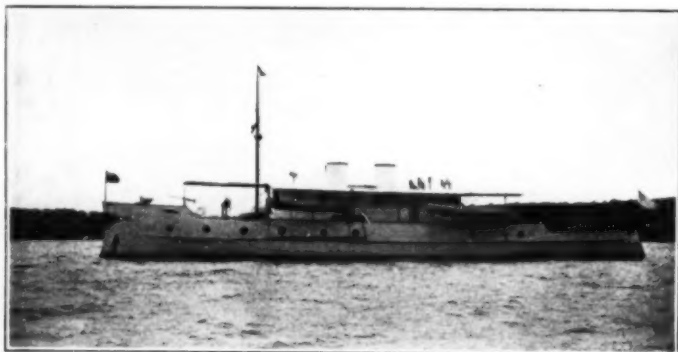


7025.—110 x 86 x 15.4 x 7.10. Steam. Wood—extra heavy. 3 staterooms (each with separate toilet) and main saloon berth 7. Deck dining saloon. All modern conveniences. Speed 14-15 miles. Complete and elegant inventory. Whole outfit in first class condition. Bargain.

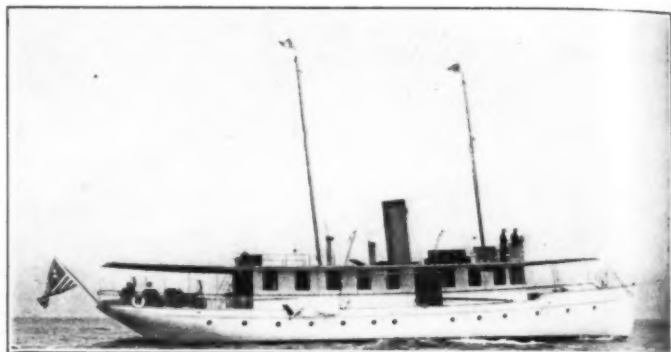
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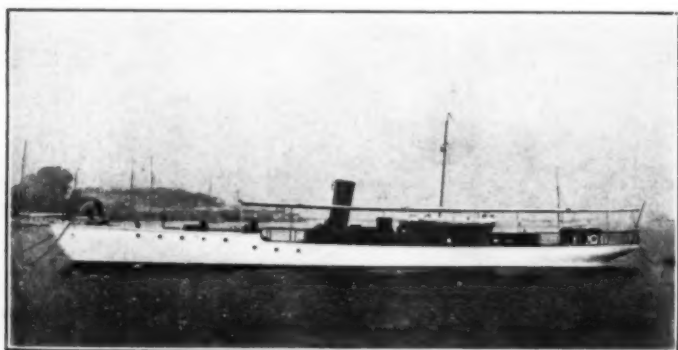
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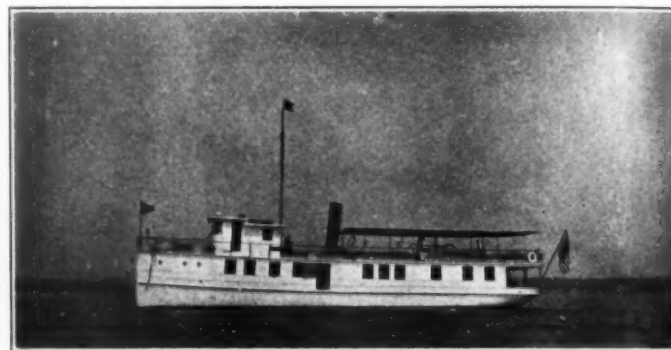
5318.—100 x 18½ x 4. Twin Screw Sea Cruiser. 5 staterooms. 2 saloons. Deck dining-room. Speed 12 miles. Cost \$40,000. Low price.



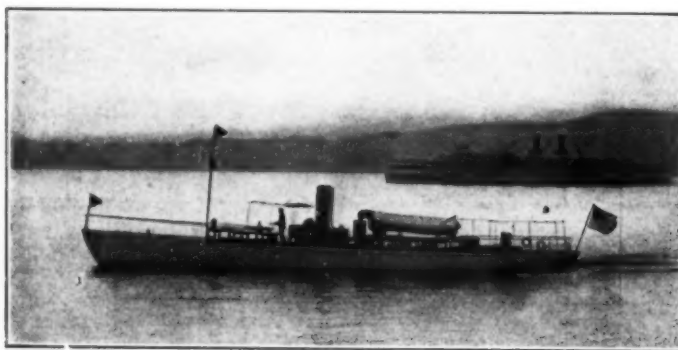
7486.—93 x 82 x 17½ x 4.10. Ideal Coast Cruiser. Herreshoff construction. 6 staterooms. 2 baths. Crew 4.



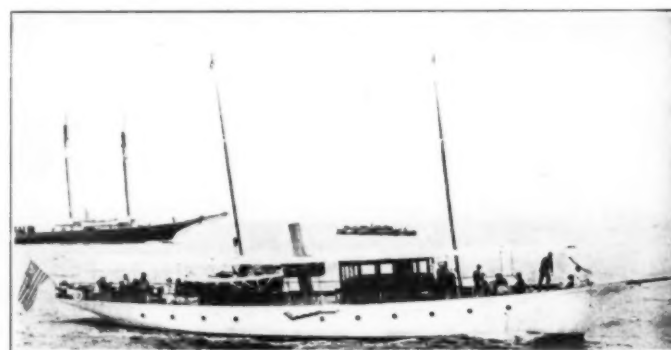
5777.—98 x 87 x 11½ x 4.5. Express Cruiser. Double planked. 2 staterooms. After saloon. Speed 17-20 miles.



6198.—90 x 17 x 4. Steam Coast Cruiser. 4 staterooms, berth 8. Bath. Large dining-room with transoms, etc. Headroom 7 feet. Electric lights. Steam heat. Triple engine; Roberts boiler. Speed 10 miles. Exceptionally able.



6431.—81 x 10½ x 3.4. Herreshoff Express Cruiser. Saloon berths 4. 2 transoms in dining saloon. Electric lights. New boiler, 1910. Speed 20 miles.



7164.—86 x 70 x 13.7 x 6. Herreshoff Coast Cruiser. Double planked. 2 staterooms and saloon forward, berth 6. Bath. Deck dining-room. Speed 12 miles. Big bargain.



6930.—66 x 10½ x 4. Coast Cruiser. Lawley design. Pilot house and saloon berth 4. Speed 12 knots.



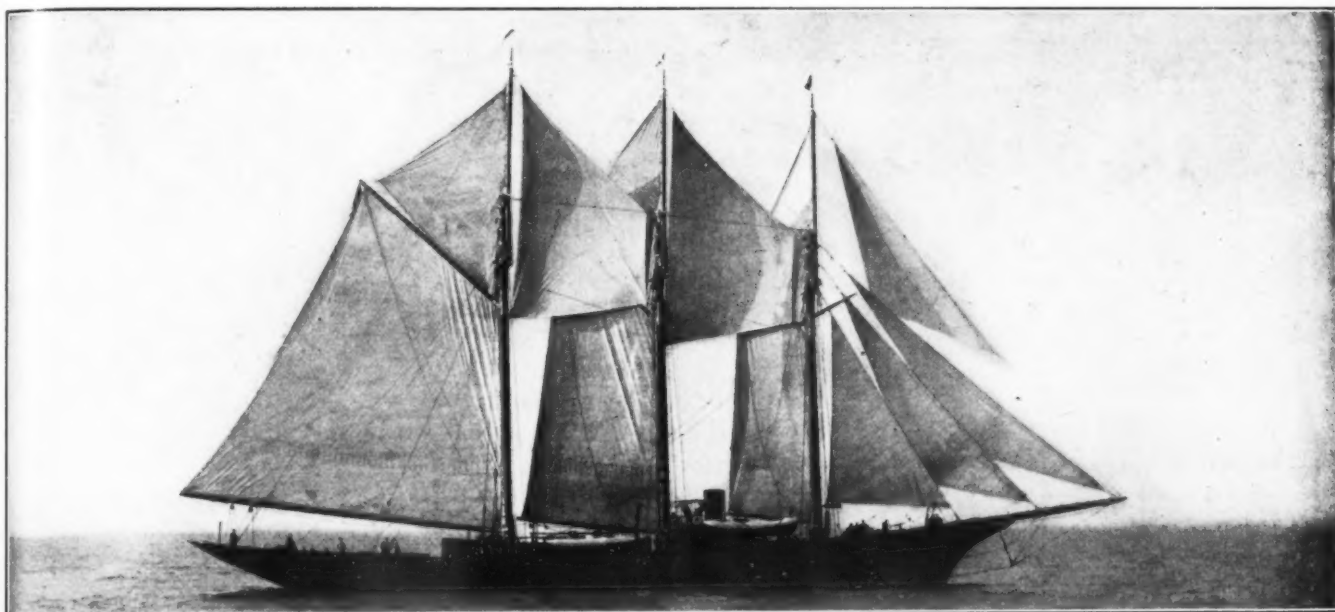
5640.—61 x 54 x 15¼ x 5.10. Herreshoff construction. Deck dining saloon. 2 staterooms and convenient bath. Steam heat. Cruised extensively Atlantic Coast. Fine sea boat. Economically maintained.

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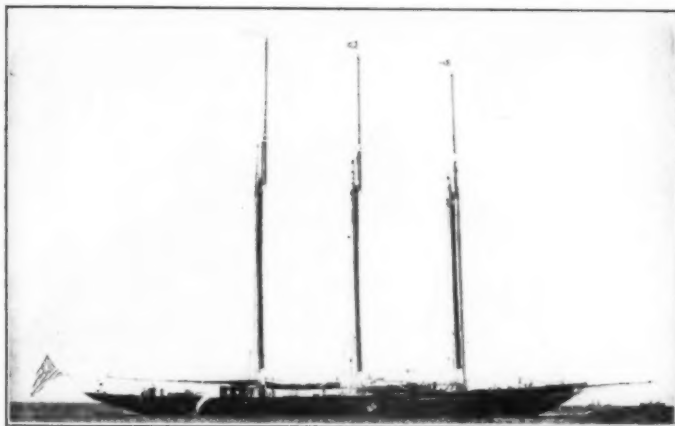
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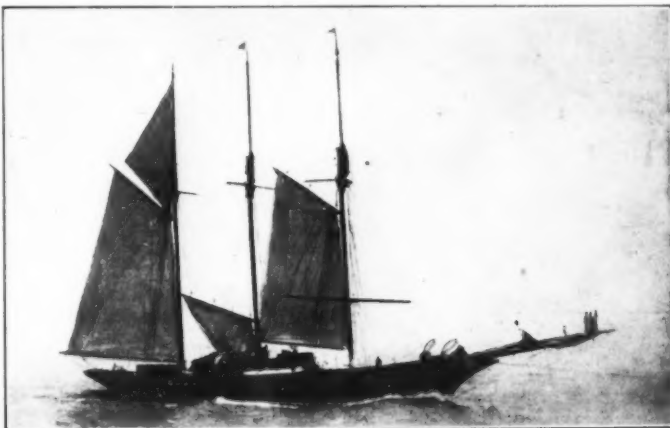
AUXILIARIES, SCHOONERS AND YAWLS.



11547.—197 x 150 x 32½ x 17. Steel. Flush Deck Seagoing Steam Auxiliary Cruiser, launched 1905 by Lawley from board of Swasey, Raymond & Page. 7 staterooms, berth 10; 3 bathrooms. Owner's office and library. 750 H. P. triple engine; Scotch boiler; speed 10¼ knots under power. All modern conveniences, including laundry; large bunker capacity. One of the finest auxiliaries extant, exceptionally able and smart sailer. Offered by Estate.



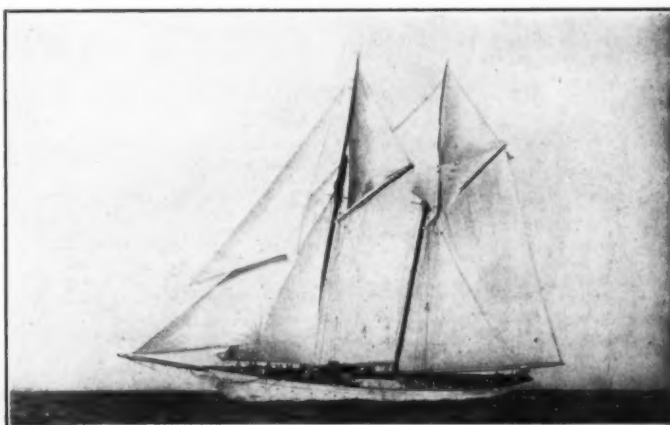
11394.—187 x 137 x 29.9 x 18. Steel Auxiliary Steam Seagoing Cruiser. 5 staterooms; 3 baths. Triple engine; Almy boilers; speed 10 knots. Magnificently appointed. Winner Emperor's Cup, Atlantic Ocean race, 1905. One of the finest craft of character available.



11560.—191 x 156 x 27.8 x 14.9. Steel. American build. Flush Deck Seagoing Auxiliary Steam Cruiser. 7 staterooms; 4 bathrooms. Library. Triple engine; Scotch boiler. Speed 9 knots per hour at sea. Completely equipped. Cruised extensively in foreign waters. Very fine seaboat.



11648.—163 x 132 x 13.5. Steel Auxiliary Steam Ocean Cruiser. 6 staterooms; 2 baths. Cruised Atlantic coast and foreign waters extensively. Very able seaboat.



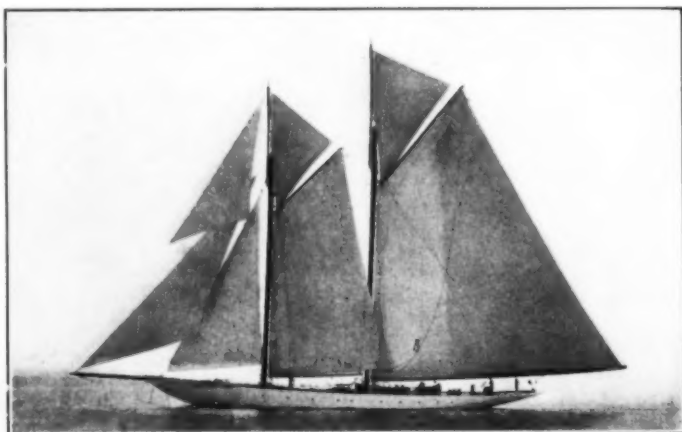
11694.—162 x 120 x 28 x 16. Steel. Keel Flush Deck Steam Auxiliary Seagoing Cruiser. Cary Smith design. 5 staterooms; large saloon. Breakfast room. 3 baths. All conveniences for off-shore cruising. Available for charter.

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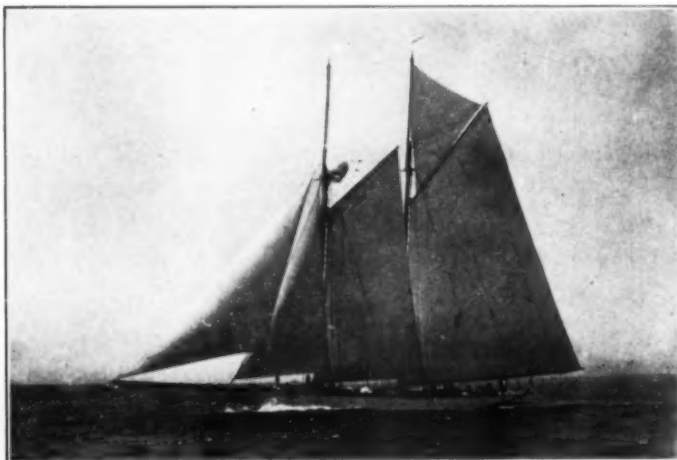
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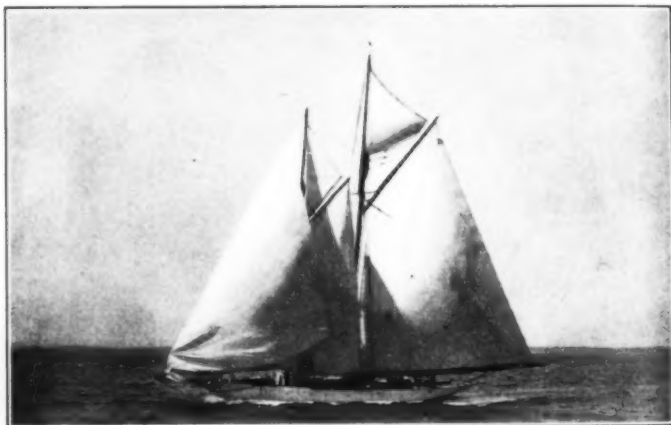
10386.—128 x 95 x 26 x 14. Steel. Sea cruiser. Lawley construction. 5 staterooms and saloon; berth 10. 3 baths. Acetylene light. Teak and mahogany interior. Suitable for auxiliary power. Very little used. Sacrificed.



10595.—137 x 101 x 24.4 x 14½. Famous cruiser. Composite build by Lawley. 5 staterooms and saloon; berth 10. 2 baths. Cruised foreign extensively. Suitable for auxiliary power.



11696.—127 x 87 x 24.2 x 16.2. Steel. Flush Deck Keel Seagoing Cruiser. By Herreshoff. 65 tons lead ballast. 5 staterooms, ladies' cabin, large saloon; berths 12. 3 bathrooms. Complete inventory. Very fast sailer and consistent cruiser. One of the finest boats of character available.



11351.—118 x 79 x 22.2 x 13½. Steel Keel Flush Deck Seagoing Cruiser. 5 staterooms; 2 baths. 100 Standard engine, new 1910; speed 10 knots. Acetylene light; hot water heat. New Ratsey sails. Cruised extensively Atlantic coast. One of the finest auxiliaries available.



11314.—115 x 80 x 23 x 11. Steel. C. B. & K. Lawley Seagoing Auxiliary Cruiser. 4 staterooms; saloon; berths 9; bath. 100 Standard; speed 8 knots. Magnificently appointed. Cost \$80,000.



11108.—106½ x 75 x 24 x 5½. C. B. Seagoing Auxiliary Cruiser. 3 staterooms and 2 baths. 150 H. P. Speedway motor; speed 9 miles. Electric lights. Hot water heat. Cruised extensively Atlantic coast and West Indian waters. Economically maintained.

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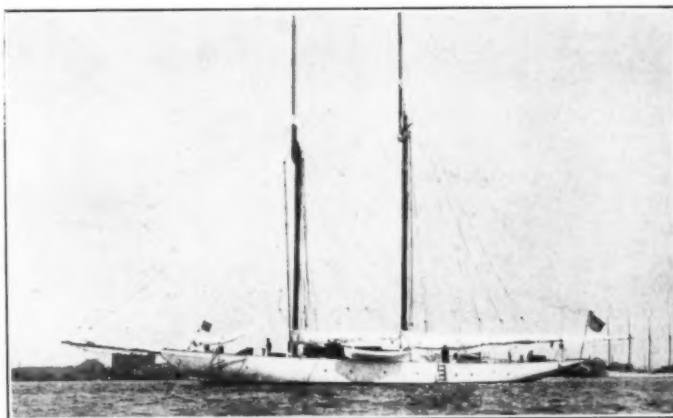
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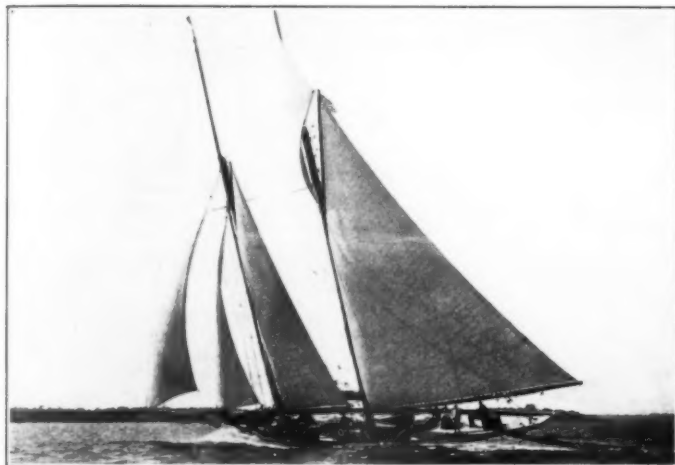
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11262.—110½ x 86 x 24 x 6½. C. B. Flush Deck Seagoing Cruiser. Fisherman construction—3 watertight bulkheads, 5 staterooms and 2 saloons, berth 8 comfortably. Bath. Acetylene light. 7 feet headroom. 60 H. P. motor; speed 7½ miles. Built to cruise anywhere. Crew 8.



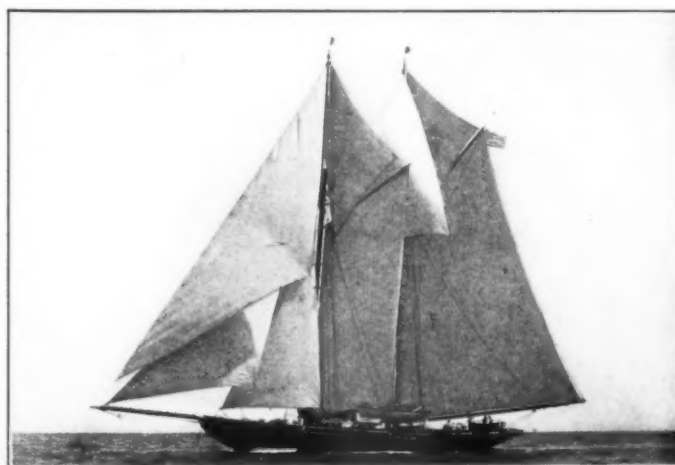
10125.—109.10 x 82 x 22½ x 10½. Extra heavy construction. Most comfortable cruising auxiliary schooner. 5 staterooms, bathroom and 2 toilets aft. Sleeps 9 in staterooms. Deck house. Hot and cold water in each stateroom. Kerosene engine. Speed 8 miles.



11558.—102 x 71 x 21.2 x 11. Steel. Keel Flush Deck Lawley Seagoing Schooner of Cary Smith design. Teak decks and trim. 3 staterooms; bath. 100 H. P. Standard engine. Speed 8 miles. Complete inventory. Cruised extensively Atlantic Coast and West Indies, proving wonderful seaboat.



10483.—100 x 81 x 21.4 x 7. Wood. Exceptionally heavy construction. C. B. Flush Deck Seagoing Cruiser of Cary Smith design. Copper sheathed. Teak deck trim. 4 staterooms. Saloon with fire place and piano. Bath. Acetylene light. 30 H. P. Murray & Tregurtha, new 1910; speed 6 miles. Cruised West Indies.



11383.—97 x 60½ x 20 x 10. Keel Flush Deck Auxiliary Cruiser. Extra Heavy construction; 3 staterooms; bathroom. 50 H. P. Standard engine, new 1910. Speed 8 miles. Suitable any sort cruising. Economically maintained.



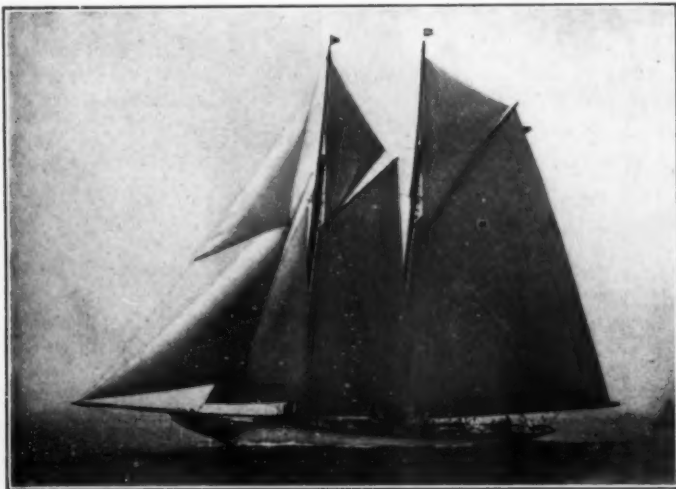
11352.—96 x 70 x 19½ x 8½. C. B. & K. Flush Deck Auxiliary Cruiser. Lawley construction. 3 staterooms; saloon; 2 baths. 75 H. P. engine, new 1906; speed 7 knots. Acetylene light. All conveniences.

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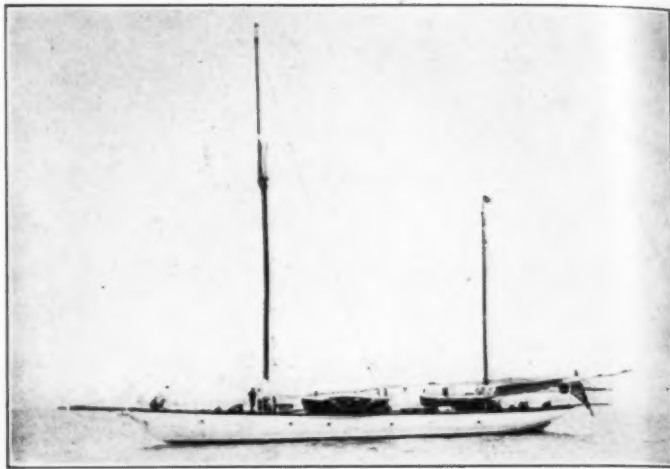
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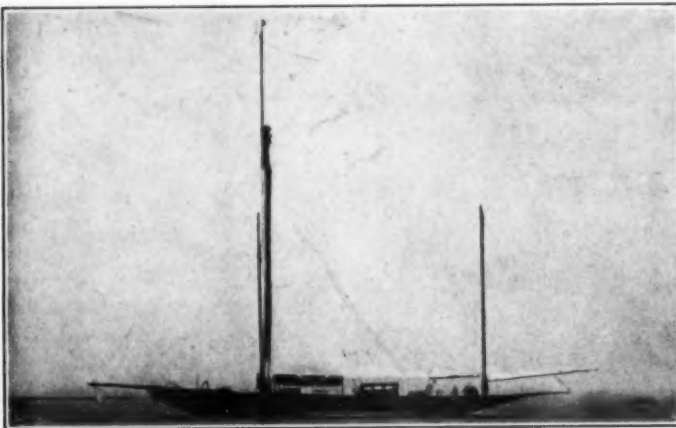
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11492.—98 x 68 x 20 x 12. Steel. Keel Flush Deck Coast Cruiser of Cary Smith design. 30 tons lead ballast. 4 staterooms and saloon. Chart room. Fully equipped for cruising. Always well owned and kept up-to-date. Smart sailer and consistent cruiser.



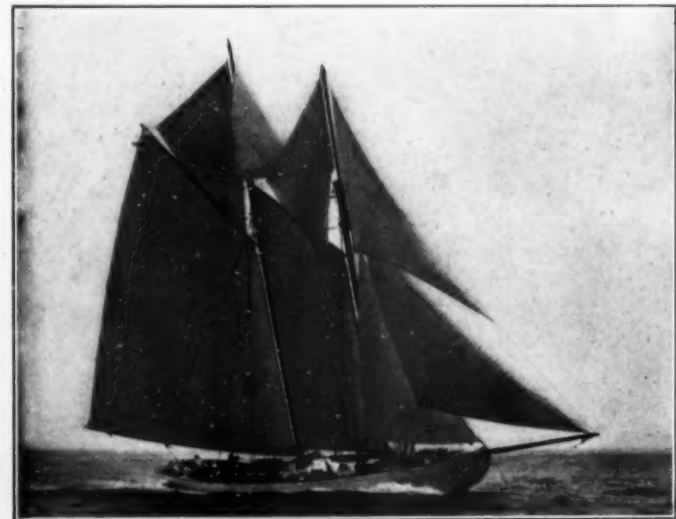
11504.—97 x 76 x 20 x 4½. C. B. Auxiliary Coast Cruiser. Flush deck. Lead ballast. 4 staterooms and saloon; berth 10; 2 bathrooms—1 with shower. Headroom 7 ft. 65 H. P. Murray & Tregurtha engine; speed 8 miles. Electric lights. Complete inventory; Ratsey sails. An exceptionally able seaboat. Crew 7. Original cost, \$40,000.



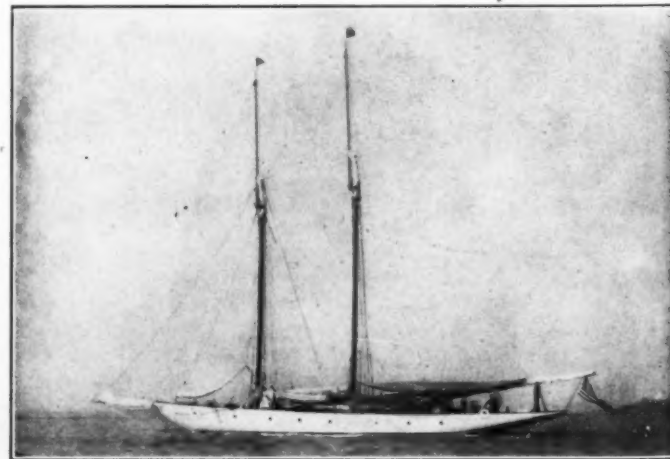
10549.—93.3 x 64.2 x 19.5 x 10½. Steel. Keel Flush Deck Sea Cruiser. 3 staterooms and saloon; berth 6. Acetylene light. Ratsey sails. Particularly well arranged. Smart sailer. An excellent seaboat. Built for auxiliary motor.



11484.—95 x 68 x 20.4 x 10. Keel Flush Deck Auxiliary Cruiser of Cary Smith design. 3 staterooms and saloon; bath. 75 H. P. Globe; speed 7 knots. Elegant cruising inventory. Cruised extensively Atlantic coast and West Indies. Fine seaboat.



10867.—85 x 62 x 19.8 x 13. Keel Coast Cruiser—Gloucester "Fisherman" design and construction. 2 staterooms and large saloon; berth 8. Bath. 7 feet headroom. Complete equipment. Unusually able. Offered by Estate—bargain.



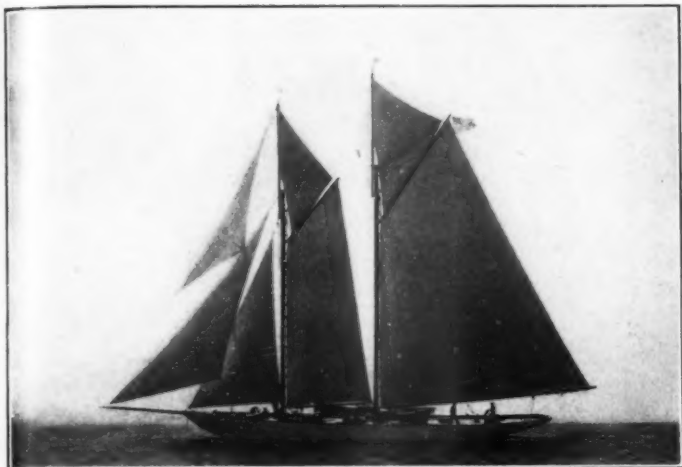
11436.—88 x 63 x 18 x 8.3. Steel. C. B. Flush Deck Lawley Seagoing Auxiliary Cruiser. 4 staterooms; saloon; berths 9. Bath. Electric light. 60 H. P. Craig, new 1909; speed 8 miles. Cruised extensively Atlantic and West Indian coasts, proving excellent seaboat. Crew 6.

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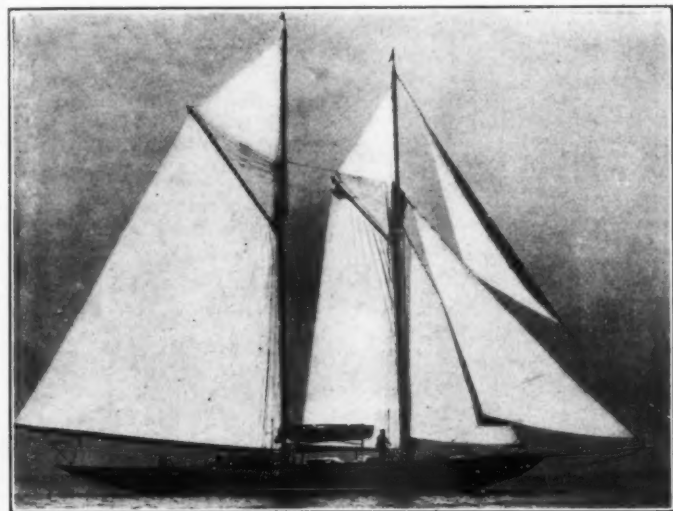
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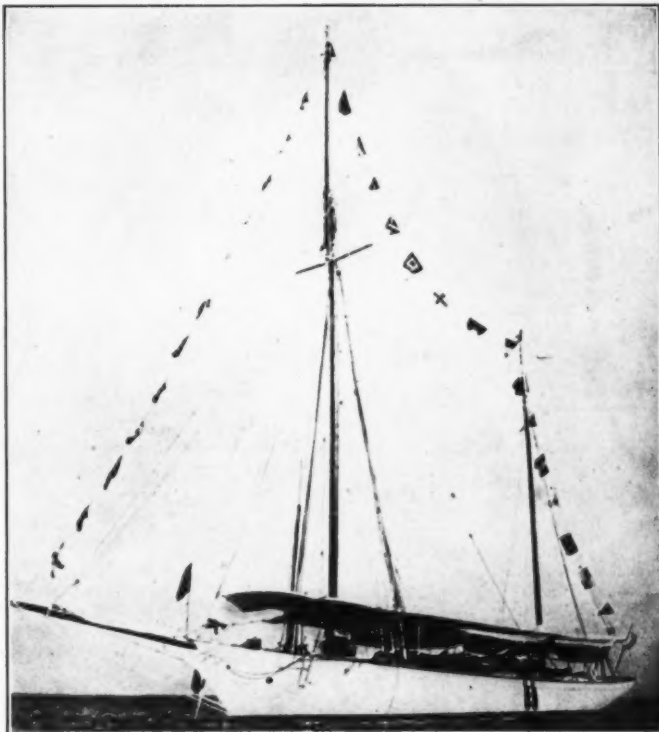
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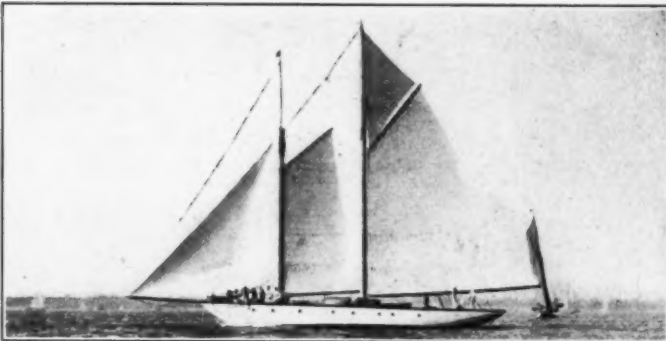
10324.—84 x 56 x 19 x 8. C. B. Flush Deck Lawley Cruiser. Three staterooms and large saloon accommodate 9. Complete inventory, including Ratsey sails. Always well owned. Suitable for auxiliary power. Cruised extensively.



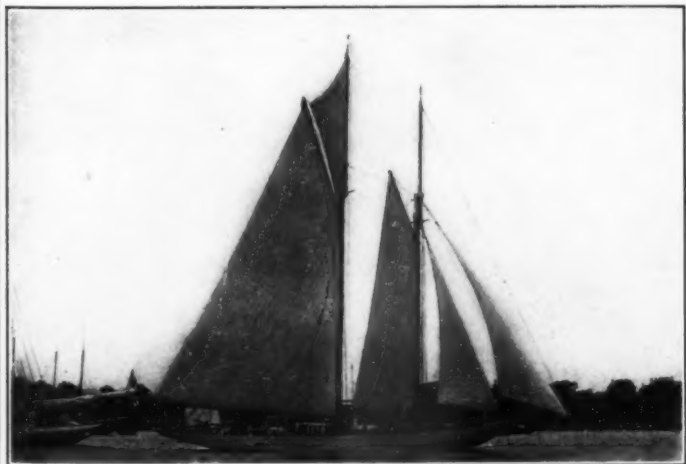
11472.—73.5 x 46 x 15 x 10.5. Flush Deck Lawley Keel Cruiser. Stateroom. Saloon. Sleeps 5. Very smart sailer. Cost \$25,000.



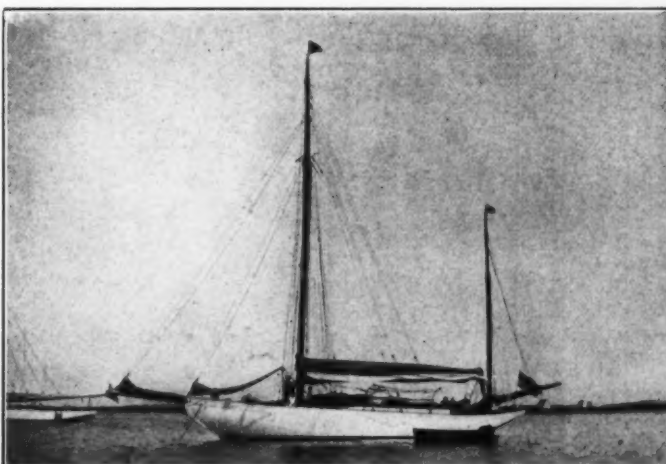
11459.—81 x 60 x 17½ x 3½. C. B. Auxiliary Cruiser. Two staterooms. Saloon. Bath. 25 Standard. Speed 7½ miles. Built for shoal draught cruising.



11534.—76 x 56 x 17½ x 10.8. Composite construction. Keel Flush Deck Coast Cruiser. Built by Herreshoff. Two staterooms and saloon berth 6 people. Lead ballast. Complete cruising inventory—2 suits sails, one by Ratsey 1912. Very successful racer, but designed primarily for off shore cruising.



11662.—74 x 50 x 15 x 10.4. Flush Deck Keel Lawley Cruiser. Two staterooms. Saloon. Two toilets. Three tenders—launch. New sails. Smart sailer.

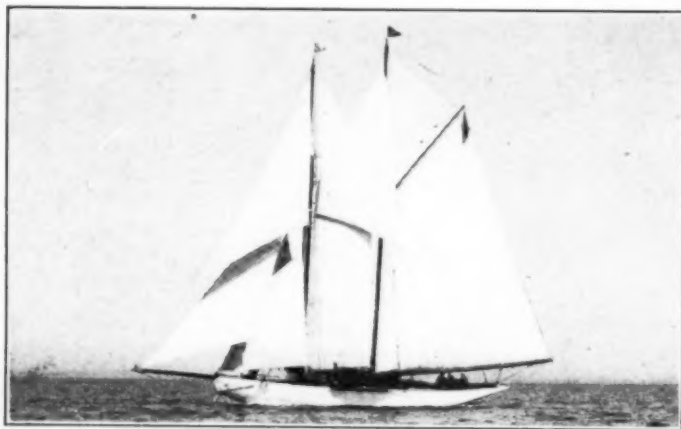


11625.—72 x 53 x 16 x 6½. Keel Auxiliary Coast Cruiser. Two staterooms and saloon berth 5. Two toilets. 6½ feet headroom. 40 h.p. Murray & Tregurtha engine, new 1910. Speed 7 miles. Entire yacht thoroughly overhauled 1913. Equipment practically renewed 1912—new upholstery 1913. Very able cruiser in first-class condition.

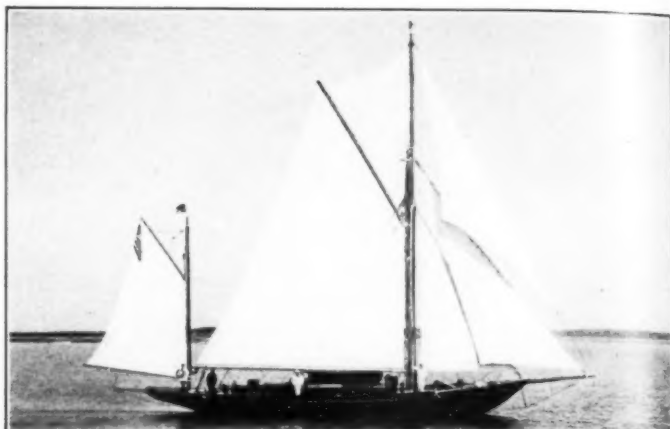
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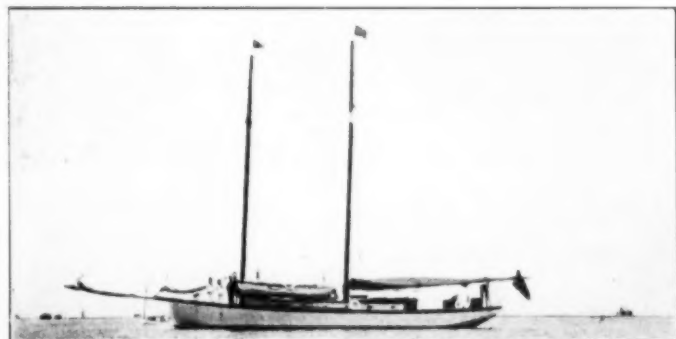
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11678.—70 x 45 x 15 x 9. Flush Deck Lawley Keel Coast Cruiser. 2 staterooms; saloon; sleeps 6. Captain's room. Smart sailer and comfortable cruiser.



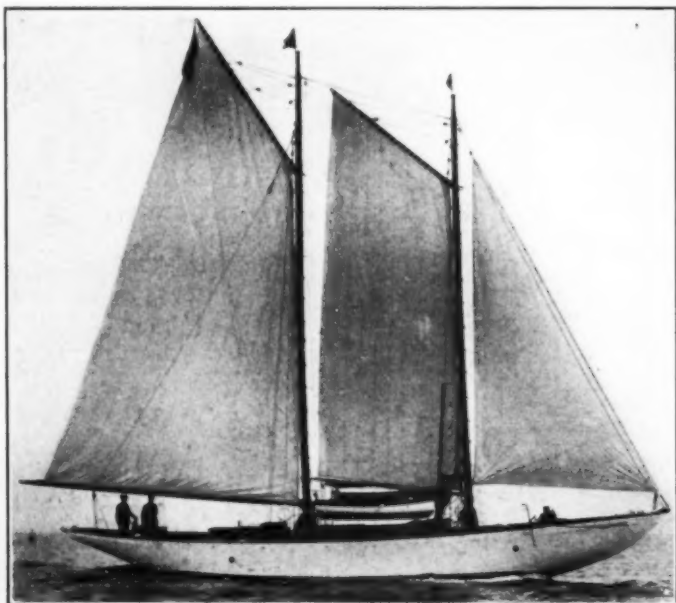
11644.—68.9 x 52 x 15.4 x 8. Keel Seagoing Cruiser. Extra heavy construction. Lead ballast. 2 staterooms, saloon, steerage; berth 6. Bathroom. Headroom 7 feet. Complete inventory. Adapted for auxiliary power. Exceptionally able craft, built for off-shore cruising.



11172.—64.3 x 56.1 x 17.2 x 3. C. B. pole mast Auxiliary Schooner. Designed for shoal draught and coast cruising. Extra heavy construction. Stateroom and saloon; berth 6. Bathroom. 30 H. P. Clifton engine; speed 8 miles. Large galley with all conveniences. Ideal for fishing and hunting in tropical waters. Bargain.



10022.—62 x 42 x 15 x 7. C. B. Auxiliary Coast Cruiser. Extra heavy construction. 2 staterooms and saloon berth 5. Mahogany interior. 20 H. P. Ralaco engine, new 1908; speed 6 miles. Exceptionally able.



11189.—60 x 40 x 13 x 8. Keel Sea Cruiser. Stateroom; saloon; sleep 4 comfortably. 18 H. P. Murray & Tregurtha engine; speed 6 miles. Crew 2.



11568.—53 x 42 x 15.8 x 6. Keel Cruiser. Headroom 6.3 ft. 2 staterooms; saloon. 2 tenders—launch. Lead ballast. Consistent cruiser.

Prices of above yachts range from \$3,000 to \$8,000 subject to concession.

Prices are in all cases named by Owners, but quotations are not necessarily lowest at which Yacht will be sold.

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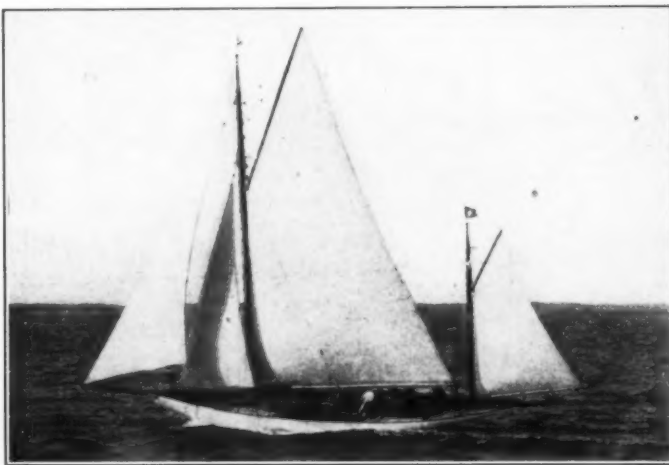
11673.—55 x 40 x 14½ x 5.3. C. B. Coast Cruiser. Headroom 6.4 ft. 2 staterooms. Saloon. Bath. 2 tenders—launch. Bargain.



11275.—55 x 37 x 12 x 7. C. B. & K. Flush Deck Lawley Cruiser. 2 staterooms. Saloon. Sleeps 6. 2 tenders. Very able.



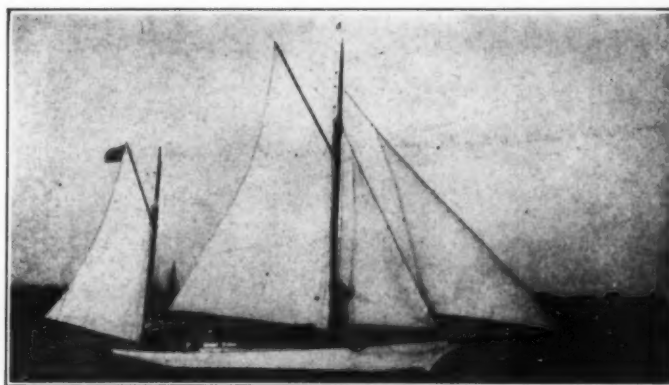
11664.—52.8 x 44½ x 13 x 7.9. Keel Auxiliary Cruiser. Launched 1913. Stateroom with double berth and saloon with 3 berths and 2 transoms; sleeps 7. 24 H. P. motor; speed 6 knots. Crew 2. Fast sailer. Made passage Boston to Halifax in 64 hours.



11392.—51 x 33 x 12.3 x 7. Cary Smith Keel Cruiser. Extra heavy construction—teak deck trim. Lead ballast. Stateroom and saloon berth 5. 2 toilets. Complete inventory—2 suits Ratsey sails. Exceptionally well built and always well owned. Considered fastest sailer of size and type.



11379.—53.9 x 35 x 12.7 x 5.8. C. B. & K. Auxiliary Cruiser. Lawley construction. Stateroom and saloon berth 5. Headroom 6 ft. 2 in. 2 berths for crew. Mahogany interior. Acetylene light. 17 H. P. engine; speed 7 miles. Complete inventory—new sails, launch and dinghy in davits. Smart sailer. Yacht thoroughly overhauled 1912.



11698.—52 x 39.9 x 14.7 x 7. Keel Auxiliary Cruiser. Lawley construction. Lead ballast. Stateroom and saloon berth 6. Two toilet rooms. 25 H. P. Holmes motor, new 1911; speed 7 miles per hour. Elegant cruising inventory, including 2 tenders, 1 launch, etc. Very able seaboat and consistent cruiser.

Prices of above yachts range from \$1,800 to \$4,500 subject to concession.

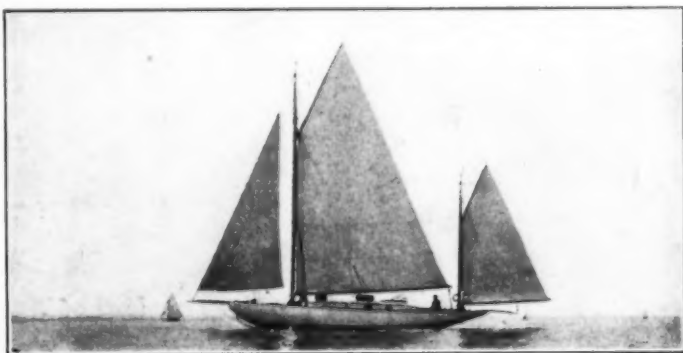
Many yachts are of sufficiently heavy construction for commercial purposes.

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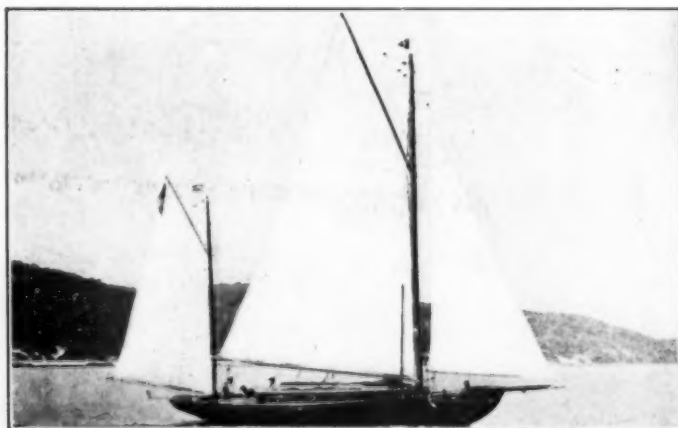
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11045.—47½ x 32 x 12½ x 5. C. B. Auxiliary Coast Cruiser. Stateroom; saloon; 12 H. P. Murray & Tregurtha engine. Speed 7 miles. Ratsey sails. Run with one paid hand.



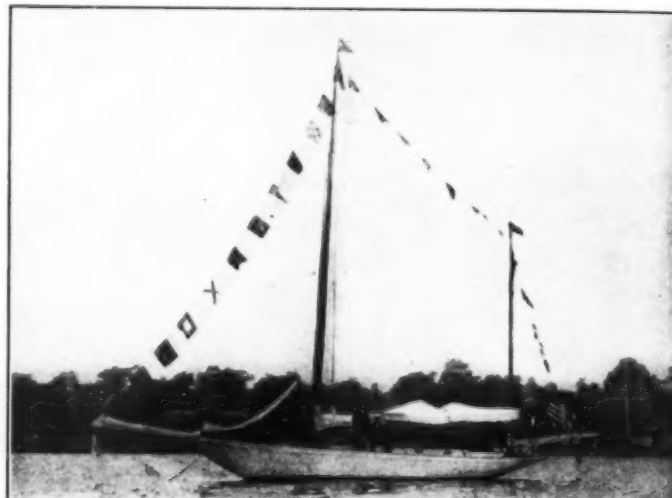
11638.—46.5 x 32 x 12.11 x 6. Keel Auxiliary Coast Cruiser. Stateroom forward with double berth, and saloon with 2 berths and transom; sleeps 5. 2 toilets. 12-15 H. P. Sterling, new 1913; speed 6½ knots. Acetylene light. New masts and sails 1912; 2 tenders. Unquestionably the finest boat of size and type available. Smart sailer and consistent cruiser. Whole outfit in perfect condition.



11592.—43½ x 31 x 12.3 x 5.11. Keel Auxiliary Cruiser. Stateroom. Saloon. 5 H. P. engine. New sails. Run with one paid hand. Very able boat.



11661.—49 x 37 x 13.9 x 7½. Keel Auxiliary Coast Cruiser. Stateroom. Saloon. Sleeps 5. 25 H. P. engine, new 1913. Speed 7 miles. Acetylene light. Completely equipped. 2 tenders—launch. Very able seaboat.



10813.—45 x 30 x 11½ x 6½. Keel Lawley cruiser. Extra heavy construction. lead ballast. Stateroom and saloon berth 5. Headroom 6 ft. 2 in. Very able cruiser and smart sailer. Complete inventory—new sails 1912, launch tender, etc.



11256.—43½ x 29 x 10½ x 6½. Keel cruiser. Substantially constructed. Stateroom and saloon berth 4. Toilet room. 2 berths forward. Run with one paid hand. Complete cruising inventory. Smart sailer.

Prices of above yachts range from \$1,500 to \$4,000, subject to concession.

Some Owners will consider accepting a smaller boat in part payment.

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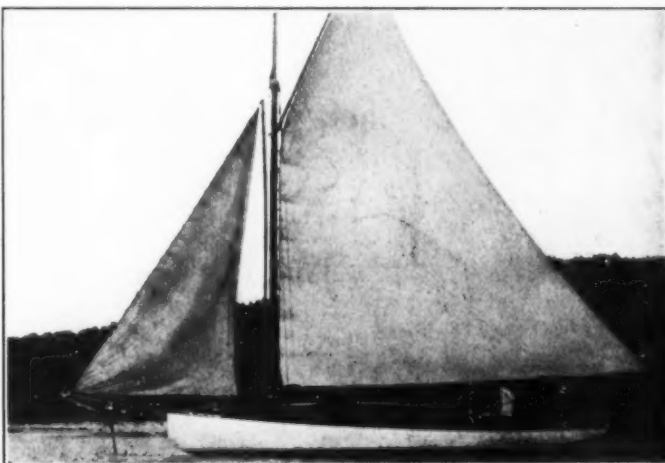
11324.—42 x 31 x 11 x 6. Keel Auxiliary Ketch. Extra heavy construction. Stateroom and saloon berth, 4. Galley full width. Headroom 6 ft. 4 in. 10 h.p. motor, new 1912; speed 5 miles. Very able seaboat maintained with one paid hand. Original cost over \$6,000.



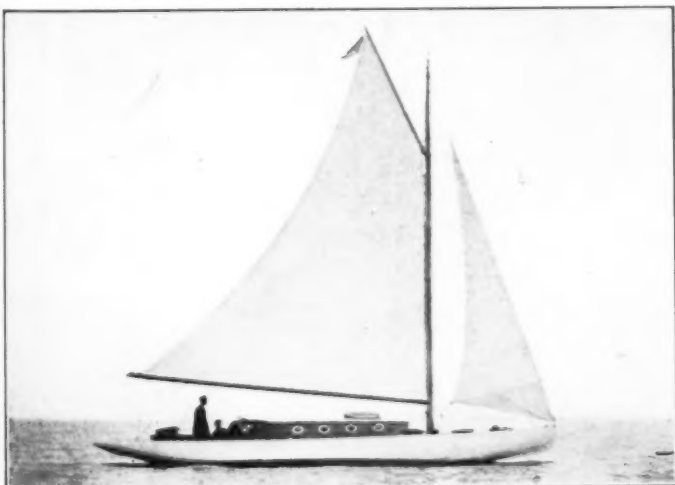
11654.—41 x 29.0 x 10 x 6.9. Keel Cruiser. 4½ tons lead ballast. Cabin berths, 4. Headroom 6 ft. Toilet with w. c. and wash basin. Acetylene gas. Complete cruising inventory—Ratsey sails, 14 ft. tender. Whole outfit well kept. An attractive all-around fast cruiser.



11615.—42 x 25 x 10 x 6. Keel Cruiser. Unusually well constructed—special bronze fastenings. Lead ballast. Comfortable cabin with 2 extension transoms. Toilet room. Galley full width. Headroom 6 ft. Solid paneled mahogany interior. Elegant cruising inventory. Has had best of care—everything in A-1 shape. Original cost \$5,000. Suitable for auxiliary power.



11573.—40.8 x 30 x 12½ x 4. C. B. Auxiliary. Stateroom. Saloon. Toilet. 7½ h.p. engine. Fine cruising inventory. Always well owned. Offered to close estate.



11627.—37 x 25 x 10 x 3. C. B. Auxiliary Cruiser. 2 large transoms in cabin make comfortable berths. Toilet room. 5 h.p. Bridgeport motor, new 1913; speed 5 miles. Complete cruising inventory, including new sails, tender, etc. Fast sailer. Ideal for shoal waters.



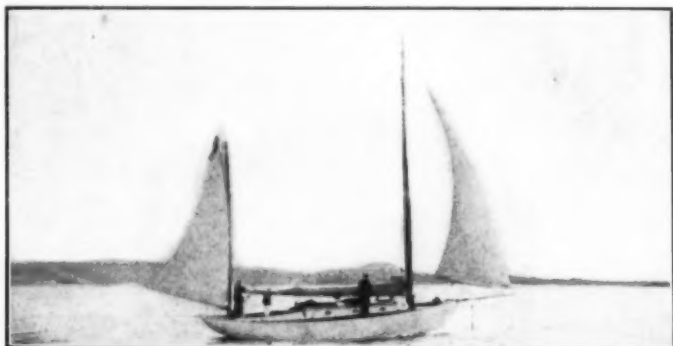
11708.—40 x 30 x 8 x 5.8. Keel Crowninshield One Design Sound Schooner. Launched 1912. Lead ballast. Berths 2 and man. Toilet. Ratsey sails. Very successful racer and cruiser.

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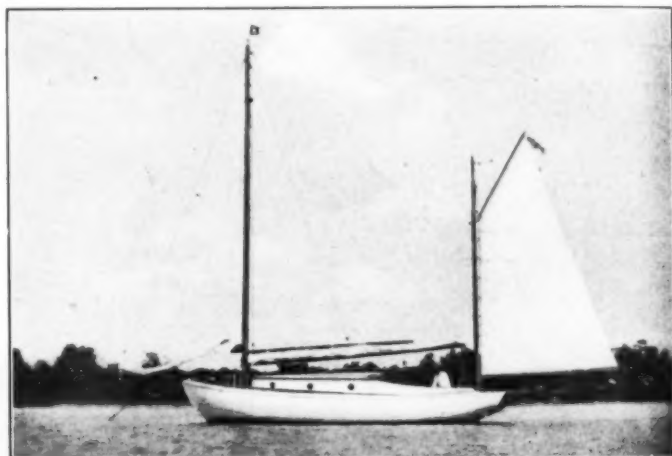
10998.—39.5 x 28.2 x 12 x 6. Keel Coast Cruiser. Extra heavy construction. Cabin berths 4 people. Headroom 6 ft. 4 in. Toilet room. Galley. Berth forward. Complete inventory. Winner Lipton Cup, New York to Bermuda. Wonderful seaboat.



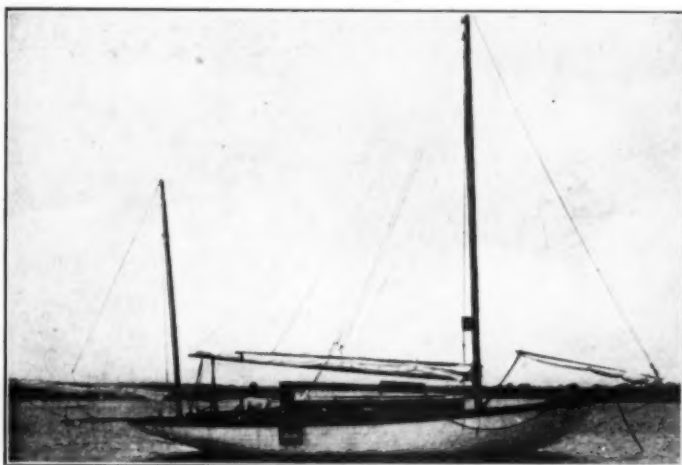
10673.—38 x 26 x 9½ x 5.9. Keel Single-handed Auxiliary Cruiser. Cabin berths 4. Toilet. 5 h.p. engine. Smart consistent sailer. Please mention MOTOR BOATING.



11691.—36 x 22.5 x 9.10 x 3.9. C. B. & K. Cruiser. Cabin 12 feet long, berths 4. Toilet. Galley. Mahogany and oak interior. Complete inventory—new sails and rigging. Very fast sailer and able single hander.



11676.—30 x 24 x 9.10 x 3. C. B. Single-handed Auxiliary Cruiser. Berths 4. Electric lights. 8 h.p. Sterling engine under bridge deck. Complete. Smart sailer. Please mention MOTOR BOATING.



11663.—31 x 22 x 9 x 4½. C. B. (under floor) Auxiliary Single-handed Cruiser. Extra heavy construction. Cabin berths 2. Headroom 5.10 ft. Toilet. 3½ h.p. Palmer engine under bridge deck. Speed 4½ miles per hour. Complete inventory. Smart sailer.



11665.—28 x 23 x 8 x 5. Keel Single-handed Cruiser. Extra heavy construction. Cabin berths 2. Galley with Shipmate range. Complete inventory—2 suits sails, one new 1913; 10-ft. tender, etc. Cruised extensively. Please mention MOTOR BOATING.

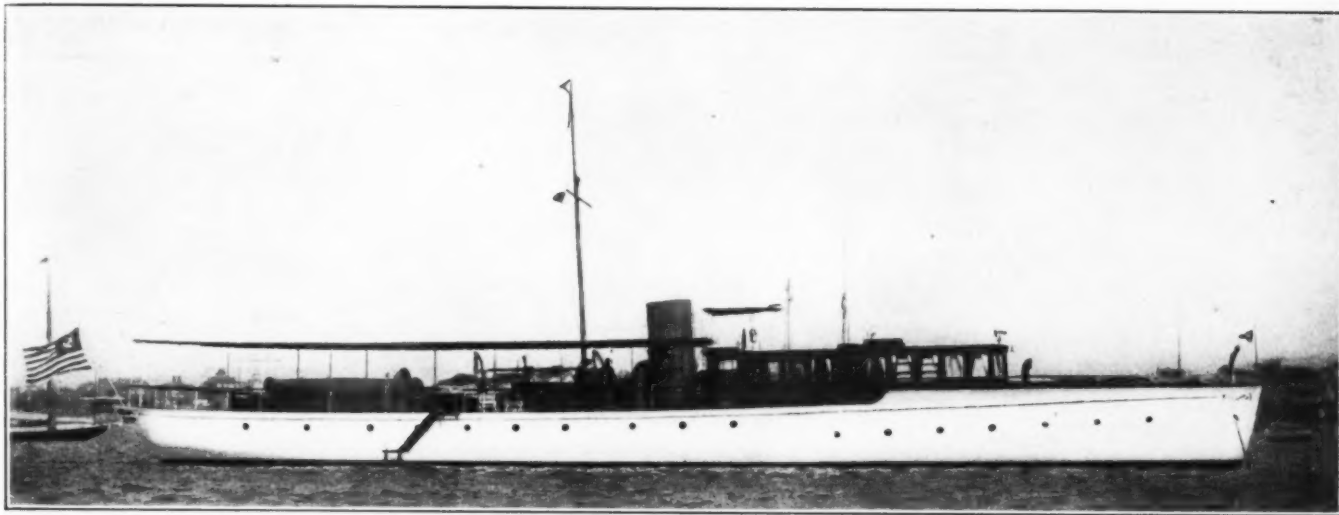
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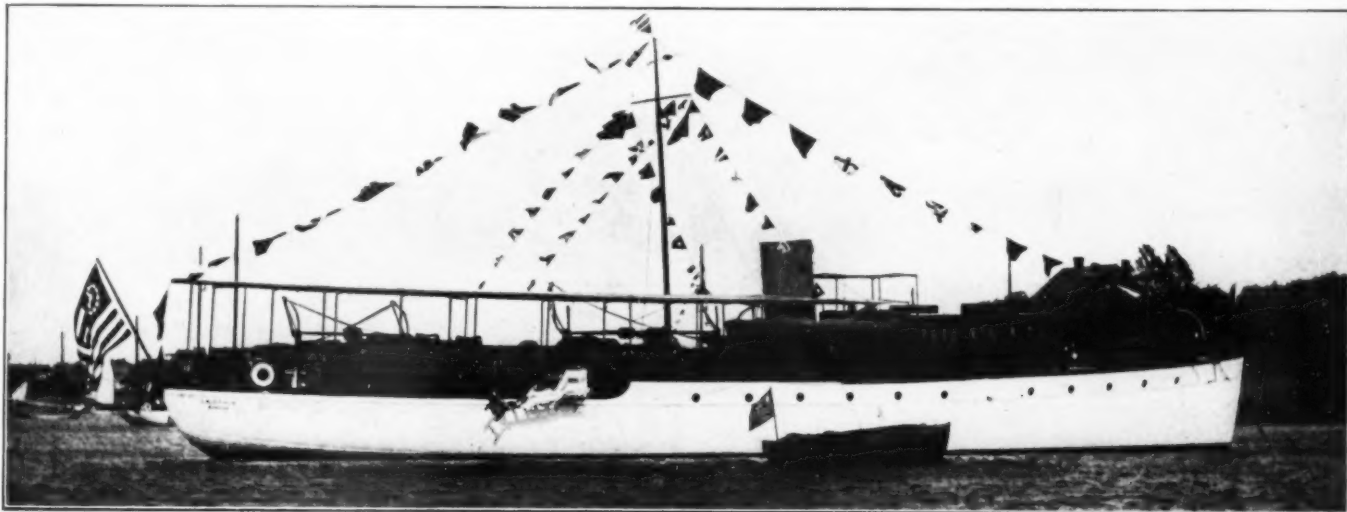
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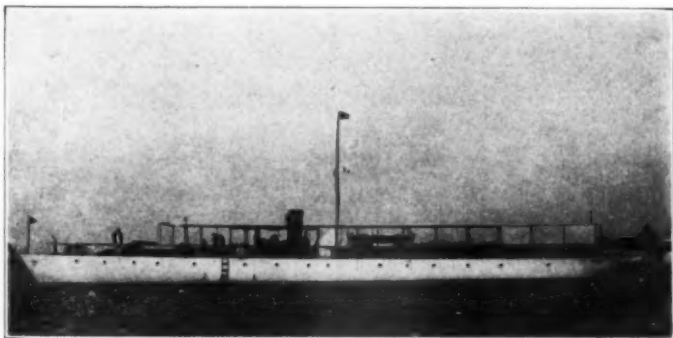
GASOLENE YACHTS



6828.—118 x 15 x 5. Steel. Twin Screw Coast Cruiser. 3 large staterooms; after saloon; deck dining saloon. Berths 11. 2 baths. Two 300 Craigs. Speed 16-18 miles. Electric lights and heat. Suitable for Diesel motors. Excellent seaboat.



6981.—110 x 17½ x 6. Twin Screw Steel Seagoing Cruiser. Lawley build. 4 staterooms and main saloon berth 7. Bath. Two 100 Standards; speed 13 knots. Crew 8. Magnificently appointed. Cruised extensively. One of the finest boats available.



6080.—120 x 12.9 x 4.2. Steel. Twin Screw Express Cruiser. Deck saloon forward of stack (not shown in picture). 2 staterooms. Saloon. 2 baths. Two 150 h.p. Craigs. Speed 15 to 20 miles. Ideal for ferry service.



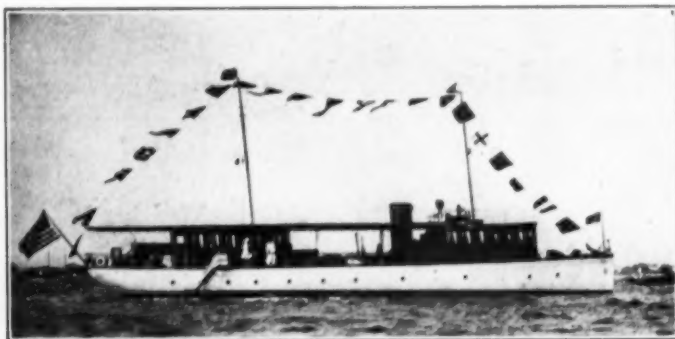
6700.—110 x 20 x 4.9. Twin Screw Gasolene Coast Cruiser. Extra heavy wood construction. 3 staterooms; saloon 18 ft. long; sleeps 8. Bath. Two 60-80 h.p. Murray & Tregurtha engines, new 1911; speed 10½ knots per hour (actual). Elegant cruising inventory. Economically maintained. Capable any sort cruising. Available for charter.

Prices of above yachts range from \$25,000 to \$40,000, subject to concession.

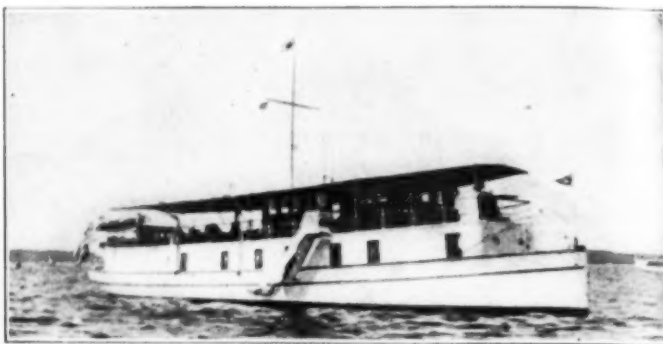
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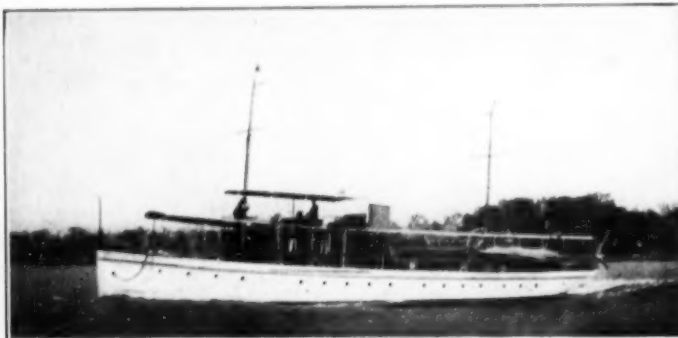
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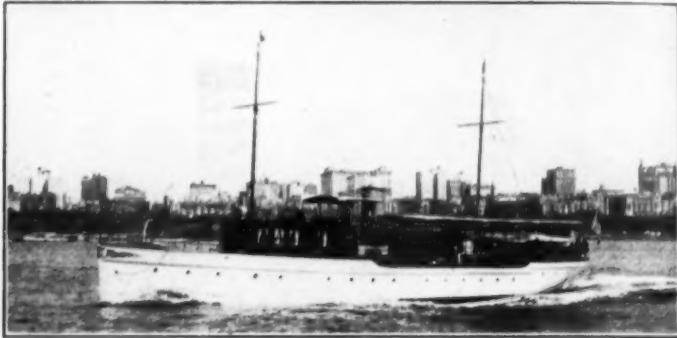
6731.—98 x 16 x 5½. Twin Screw Coast Cruiser. 4 single and 2 double staterooms aft, berth 8 people. 2 baths. Two 75 Standards; speed 13 miles. Electric lights. All modern conveniences. Cost \$50,000. Bottom coppered. Real bargain.



6443.—103 x 20 x 2½. Twin Screw Gasoline Cruiser. 5 staterooms; 2 saloons; bath. Electric lights. Two 30 h.p. White-Middleton motors; speed 9½ miles. Cruised Maine to Gulf of Mexico; excellent seaboat. Very economically maintained. Available for charter.



7494.—99 x 17 x 4. Wood. Extra heavy. Twin Screw Coast Cruiser. Launched 1912. 6 staterooms, berth 10; 3 bathrooms. Paneled mahogany interior. Two 125 h.p. Standard engines; speed 15 miles. Electric lights. All modern conveniences; deck dining saloon. Exceptionally able seaboat.



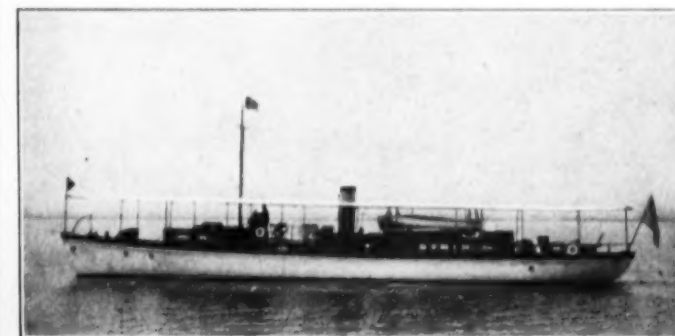
7094.—98 x 16 x 4. Twin Screw Coast Cruiser. Extra heavy construction. Teak deck trim. 4 steel water tight bulkheads. Deck dining saloon; 4 staterooms and lobby, berth 10; 2 bathrooms. Electric lights and heat. Two 100 h.p. Standard engines; speed 11 to 14 knots. Complete equipment. Cruised extensively Atlantic Coast; excellent seaboat.



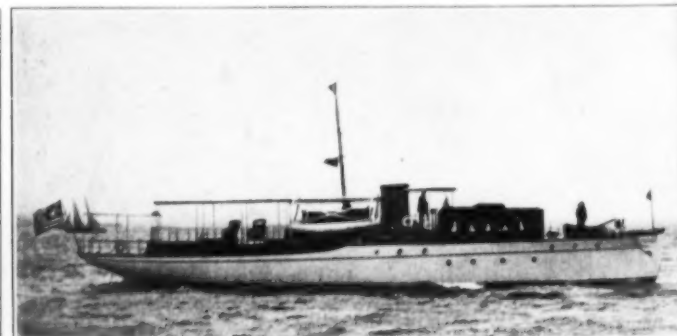
7093.—98.3 x 16 x 5. Steel Twin Screw Seagoing Cruiser; 4 staterooms, berth 8. Bath. Dining saloon, smoking room and music room on deck. Electric lights; steam heat. Two 100 h.p. Standards; speed 15 miles. One of the finest craft of character available. Elegant appointments.



7439.—96 x 14 x 4.9. Twin Screw Lawley Seagoing Cruiser; 3 staterooms; berths 7. Bathroom. Two 50-65 Standards; speed 12 miles. Designed for Labrador cruising; construction extra heavy. All modern conveniences; all rooms connected by telephone. Cruised extensively.



6411.—91 x 13½ x 4½. Twin Screw Semi-express Coast Cruiser. Extra heavy ELCO construction. Owner's stateroom with 2 berths and bath adjoining; saloon with 4 transom berths and toilet adjoining. Two 100 Standards; speed 15 miles. Electric lights. Proved seagoing qualities on 3500 mile trip: Bayonne, N. J., to Galveston, Tex. Cost \$35,000. Bargain.

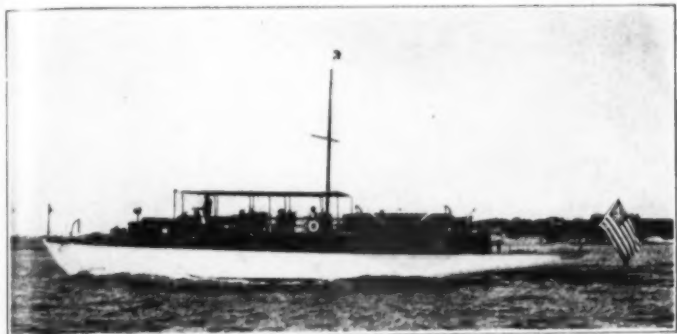


7544.—90 x 15 x 4.3. Twin Screw Coast Cruiser, launched 1912; 3 double-staterooms, berth 8 people. Large bathroom. Two 60-90 h.p. Sterling motors; speed 12 knots. 7 feet headroom. Very handsome interior. Electric lights. All modern conveniences; dining saloon forward with dumbwaiter to galley below. Very able seaboat.

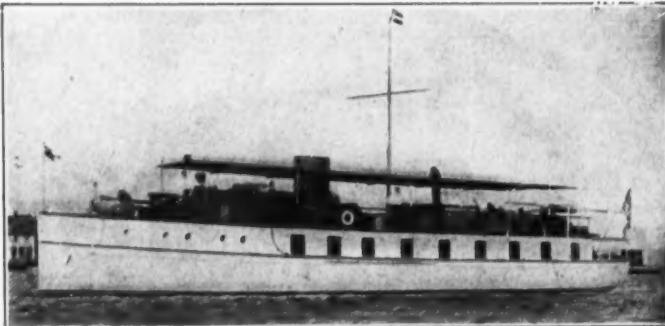
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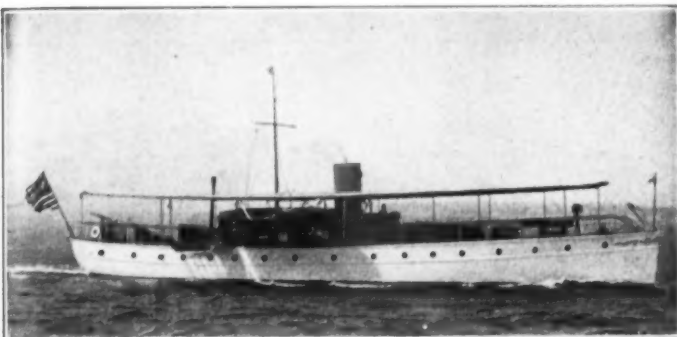
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5915.—90 x 14½ x 4. Twin Screw Coast Cruiser. Double planked; 3 staterooms. Bath. Two 60 h.p. Craigs. Speed 12-15 miles. All modern conveniences. Splendid seaboat.



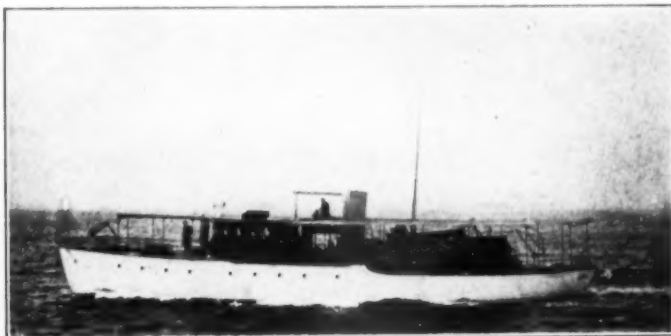
7421.—90 x 17 x 3.3. Extra heavy construction. Ideal American Cruiser. 3 double and 1 single stateroom; saloon; berths 11; 2 baths. Two 60 h.p. Craigs. Speed 12 miles. Electric lights. Hot water heat. Luxuriously appointed. Cost \$30,000. Cruised extensively.



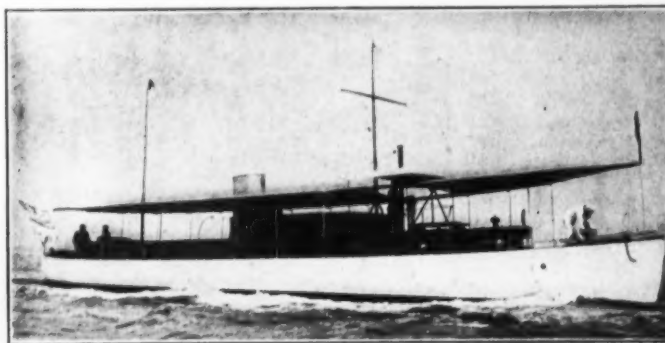
7402.—90 x 15.3 x 5.8. Launched 1912. Twin Screw Coast Cruiser; 3 staterooms; saloon; berths 6. Bath. Two 60-75 h.p. Holmes engines; speed 13 miles. Electric lights. Hot water heat. All conveniences. Splendid seaboat.



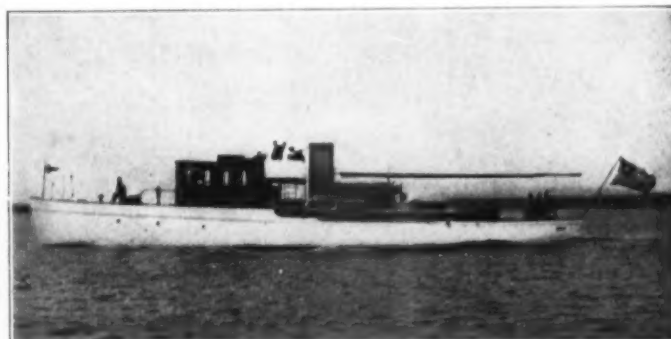
6127.—90 x 14½ x 6. Lawley Coast Cruiser. Extra heavy construction; 2 double staterooms; lobby with berth and bath aft; owner's room and private bath forward. Sleeps 8. 7 feet headroom. Electric lights. 100 h.p. Standard; speed 12 miles. Cruised extensively. Crew 4.



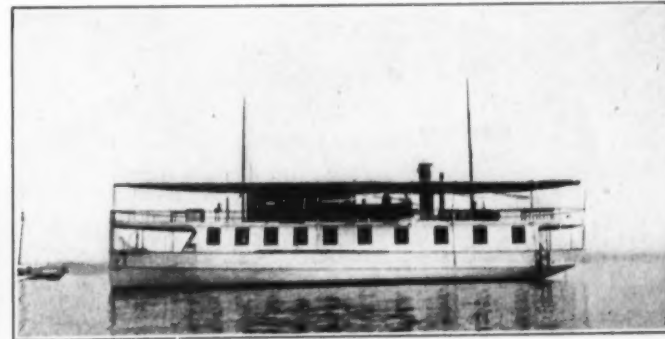
6856.—90 x 17 x 4. Twin Screw Lawley Coast Cruiser. 3 large staterooms; lobby. Sleeps 6. Bath. Two "20th Century" motors, new 1914; speed 12 miles. Electric light and heat; 4 tenders.



6976.—87 x 15 x 5. 150 Craig; 4 staterooms; gas light; piano; bath. Inspectable in commission. Most complete and expensively furnished yacht available. Storage free to May 1, 1914.



7515.—81 x 13 x 3.10. Lawley Coast Cruiser. 2 staterooms; saloon. Berths 8. Shower bath. 100 Standard; speed 13 miles. All modern conveniences. Deck dining saloon seats 10. Cruised extensively. Crew 4.



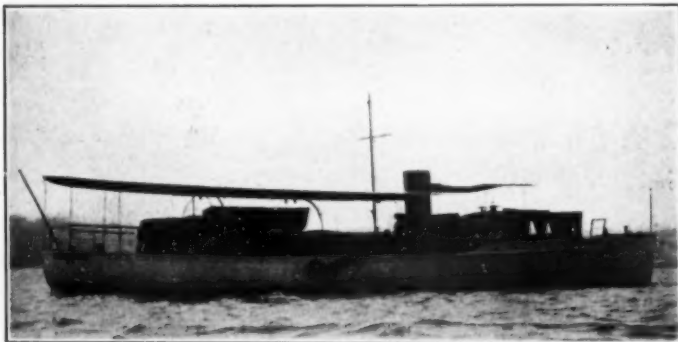
7409.—85 x 23½ x 4. Twin Screw Coast Cruiser. 3 double staterooms forward; berths 9. 2 baths. Dining-room full width; berths 2. Two 70 h.p. "20th Century" engines; speed 10 knots. Electric lights. Maximum comfort at minimum cost maintenance. Crew 4.

Prices of above yachts range from \$10,000 to \$25,000, subject to concession.

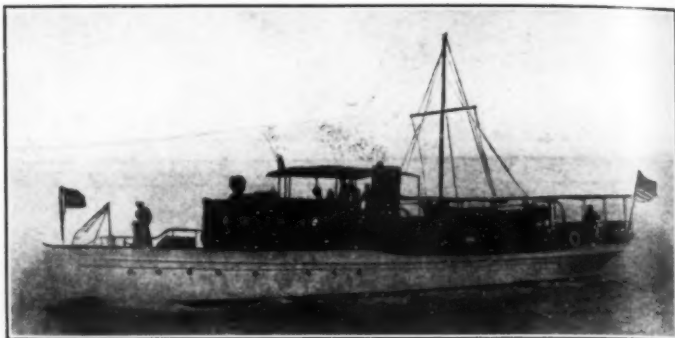
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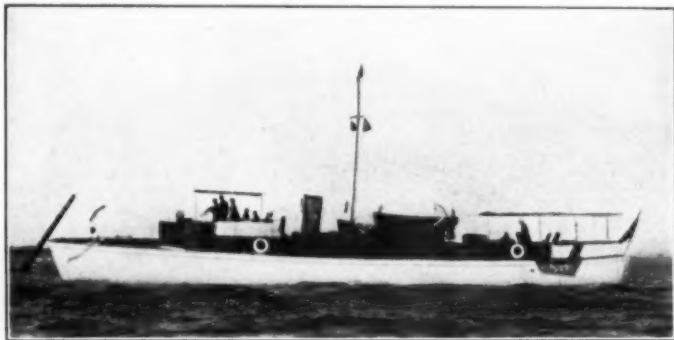
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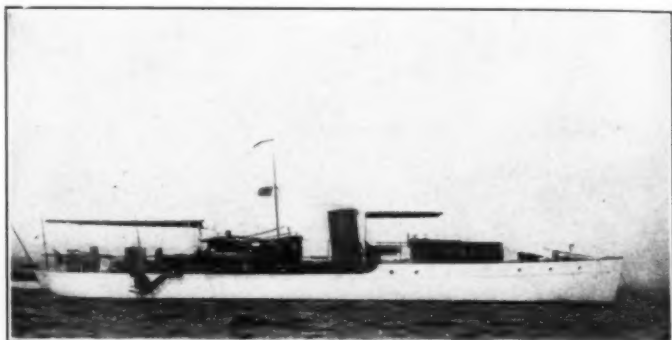
7448.—82½ x 13 x 3½. Twin Screw Coast Cruiser. Launched 1913. 2 staterooms and saloon berth 8. Bath room. Electric lights. Two 35-40 h.p. "20th Century" motors; speed 13 knots. An exceptionally high-grade cruiser. Elegant inventory. Considered the finest equipped and best constructed craft of size and type in this vicinity.



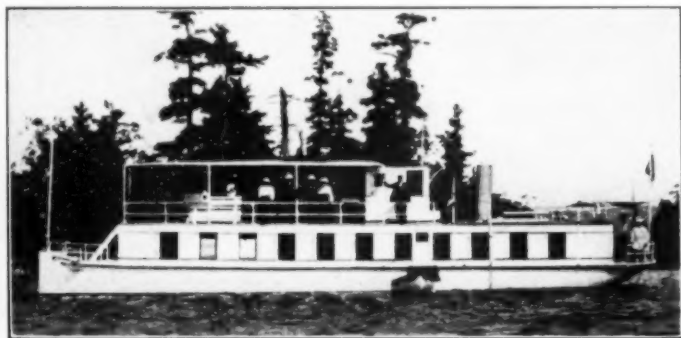
7351.—82 x 13½ x 2½. Twin Screw Matthews' Coast Cruiser. Launched 1912. 2 staterooms. Saloon. Berths 6. Bath room. Two 60 h.p. Sterlings. Speed 14 miles. All modern conveniences.



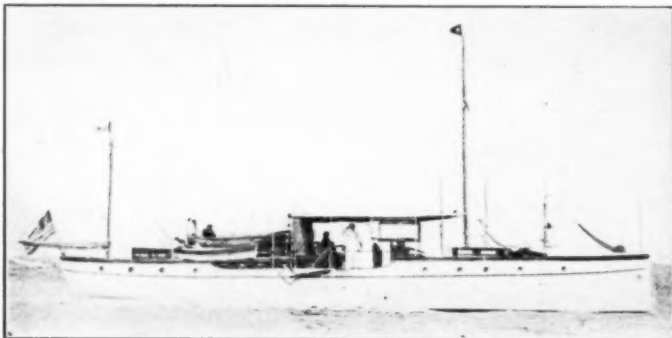
5279.—80 x 13 x 3½. Coast Cruiser. 2 staterooms, saloon berths 7. Bath. 100 h.p. "20th Century" engine, installed 1911; speed 13 knots. Cruised extensively. Acetylene light. Big bargain.



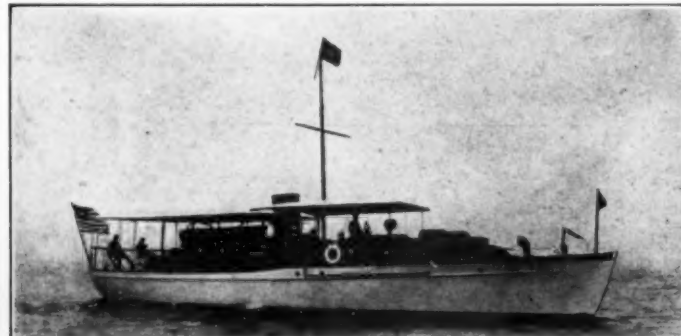
7440.—76 x 12 x 4. Twin Screw Lawley Coast Cruiser. Launched 1912. 2 staterooms; deck dining saloon. Berths 7. Bath. Two 60 h.p. Murray & Tregurtha engines; speed 13 knots. Latest development of type. Able seaboat, economically maintained.



7258.—75 x 16 x 2.4. Steel. Twin Screw Gasoline Cruiser. 4 double staterooms; living and dining rooms. Bath. Piano and fire place. Two 27 h.p. Wolverine motors; speed 8 knots. Complete cruising inventory. Economically maintained. Ideal for tropical climate.



7137.—73 x 13.10 x 4½. Twin Screw Seagoing Cruiser. 2 staterooms and saloon berths 6. Bath. 3 toilets. Two 30-40 h.p. Murray & Tregurtha engines; speed 10 knots. Electric lights. Exceptionally able craft.



7546.—72 x 13 x 4½. Latest Type Coast Cruiser. Launched 1912. 2 staterooms. Dining saloon. Berths 8. 75-90 h.p. "20th Century" engine, new 1913. Speed 10½ knots (actual). Electric lights. Hot water heat. Elegant inventory. Capable any sort coast cruising.



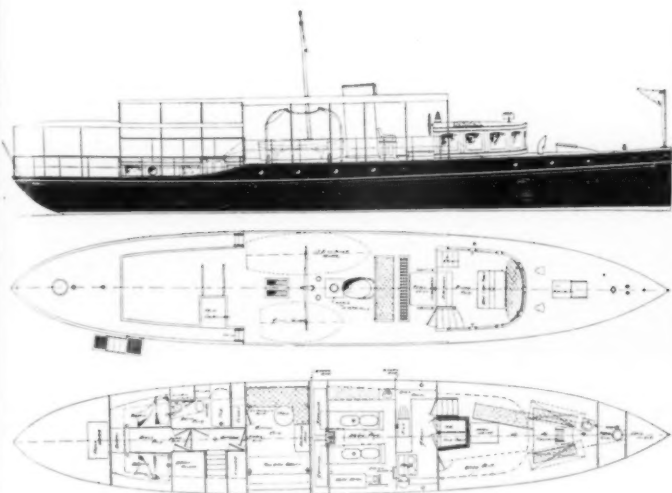
7295.—72 x 12 x 3½. Twin Screw Coast Cruiser. Stateroom; saloon berths 8. Bath. Electric lights. All modern conveniences. Polished mahogany interior. Two 40-60 h.p. Murray & Tregurtha engines; speed 13 miles. Crew 2. Cruised extensively. Able seaboat. Cost \$25,000.

Prices of above yachts range from \$5,000 to \$20,000, subject to concession.

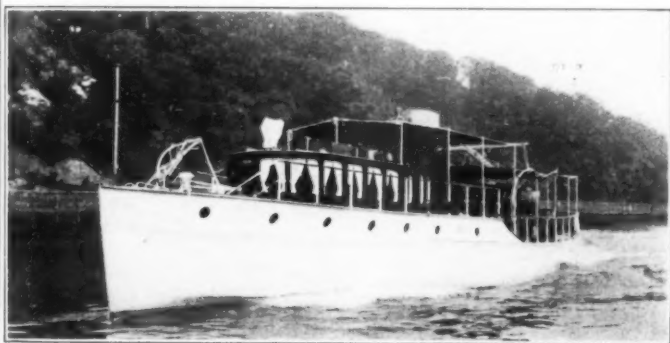
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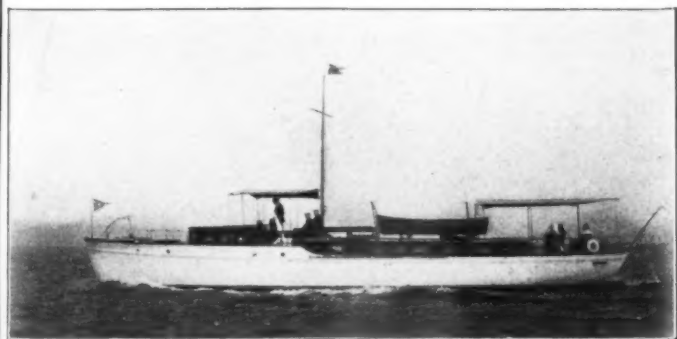
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7555.—For Sale.—71 x 12½ x 3½. New 1912. 2 double staterooms. Bath. Dining saloon forward. Two 45 h.p. "20th Century" engines, speed 13 miles. Electric lights. Complete, except linen, china, glass and silverware. Cost \$18,000. Sacrificed.



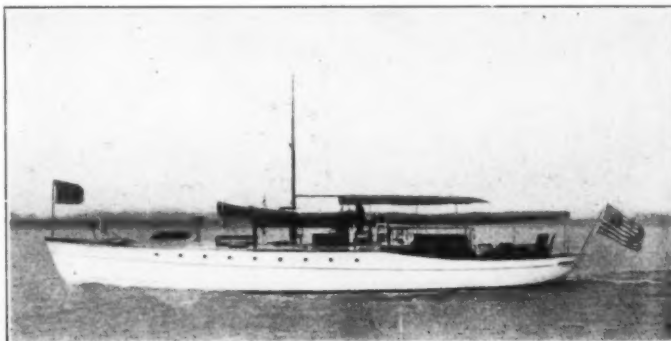
7478.—70 x 13 x 4.3. Twin Screw Coast Cruiser. Launched 1913. Deck dining saloon. 3 staterooms berth 5. Bath. Electric lights. Two 50-60 h.p. Speedways; speed 13 miles. Elegant appointments. Splendid seaboat. Available for charter.



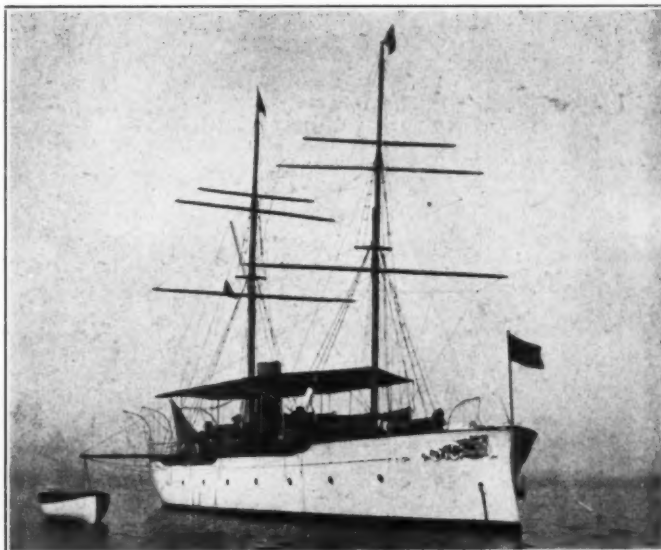
7532.—68.9 x 13 x 3. Twin Screw Lawley Coast Cruiser. 2 staterooms; saloon. Berths 6. Two 40 h.p. Lambs; speed 10 knots (actual). Electric lights. Exceptionally high-grade craft.



6708.—75 x 10 x 3.8. Express Cruiser. Double stateroom and saloon with 2 berths aft and owner's room forward, with double thwartship berth and transom seat; sleeps 8 people. Guests' toilet and separate owner's w. c. and wash basin. Electric lights. 65-90 Speedway. Speed 16 miles. Thoroughly overhauled 1912 and brought up to date. Accept smaller modern craft in part payment.



7489.—65 x 13.8 x 3½. Coast Cruiser. 2 staterooms and saloon berth 6. Mahogany interior. Electric lights. 75-90 h.p. Holmes motor, new 1911. Speed 12 miles. Bridge control. Exceptionally able.



7420.—67 x 13½ x 5.3. Unusual Coast Cruiser. 2 staterooms; saloon. Berths 7. 2 toilets. Panelled mahogany interior. 60 h.p. Sterling; speed 12 miles. Electric lights.

Prices of above yachts range from \$4,500 to \$13,000, subject to concession.

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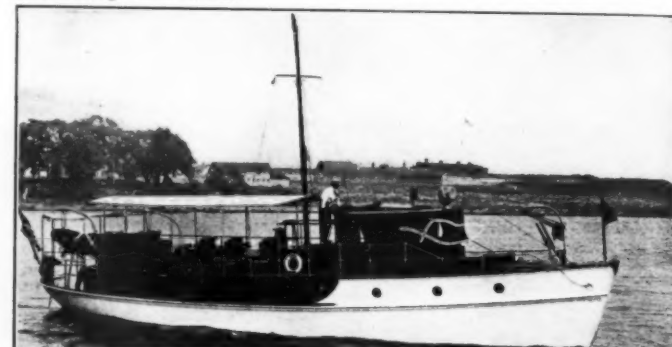
7192.—65 x 13.8 x 4. Coast Cruiser. 2 staterooms and saloon berth 7. 30 h.p. Standard engine; speed 12½ miles per hour. Acetylene light. All modern conveniences. Crew 2. Very able seaboat.



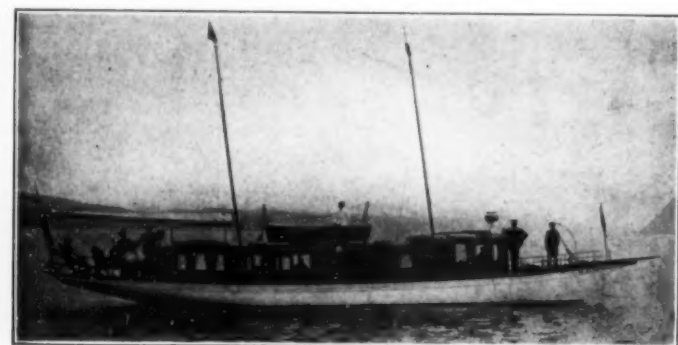
7199.—65 x 14 x 2.8. Twin Screw Coast Cruiser. Double stateroom, after saloon and pilot house berth 6 people. Two 40 h.p. Globe engines; speed 11½ miles. Electric lights. Honduras mahogany interior. Complete inventory. Ideal for shoal draft cruising. Able seaboat.



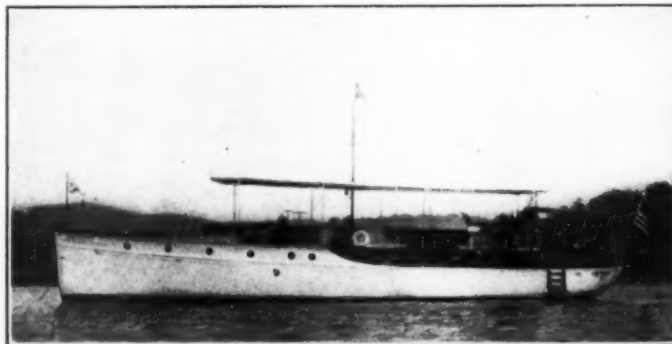
7165.—64 x 13½ x 4. Wholesome Family Coast Cruiser. Launched 1912. Berths 8 comfortably. Sterling engine. Electric lights. Able seaboat. Maximum comfort and minimum cost of maintenance.



7513.—60 x 12 x 4½. Coast Cruiser. Extra heavy construction. 2 Staterooms and saloon berth 5. Electric lights. 40 h.p. Jager engine controlled on bridge. Speed 11 miles. Splendid deck room. Very able seaboat.



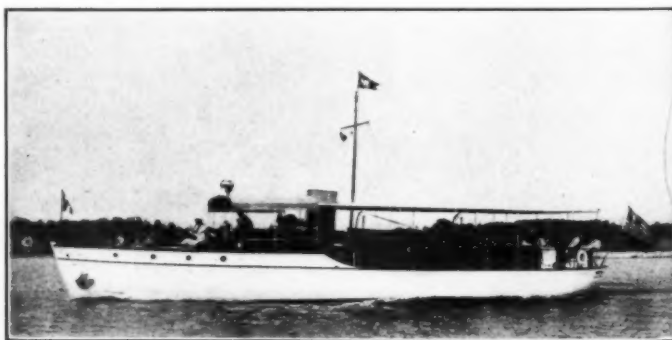
7442.—68 x 12 x 4. Twin Screw Coast Cruiser. Stateroom, after saloon and pilot house forward berth 7. San Domingo mahogany interior. Two 40 h.p. Lamb engines; speed 12 miles. Electric lights. Pilot house engine control. Bottom coppered 1913. Elegant inventory.



7511.—60 x 12 x 3½. Coast Cruiser. Launched 1913. Double stateroom aft and saloon berth 5 people. Mahogany interior. 45 h.p. "20th Century" motor; speed 12 miles. Electric lights. Very able. Available for charter.



6772.—60 x 12½ x 3½. Able Coast Cruiser. Launched 1911. Stateroom and saloon aft berth 4. Handsome mahogany interior. 30-40 h.p. "20th Century" engine; speed 10 miles. Elegant inventory. Electric lights.

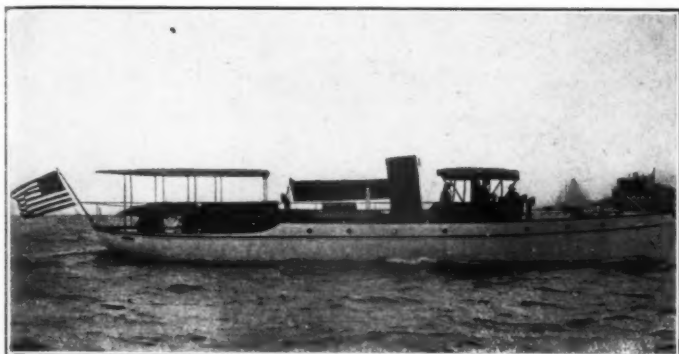


7342.—60 x 12 x 4-3. Able and seaworthy. 1 double, 1 single stateroom and saloon berth 5. Bathroom and toilet. 35-45 h.p. "20th Century" engine controlled on bridge. Speed 10-12 miles. Electric lights. Large fuel and water capacity. Fuel consumption 4 gallons per hour. Splendid seaboat. Available for charter.

Prices of above yachts range from \$4,500 to \$12,000, subject to concession.

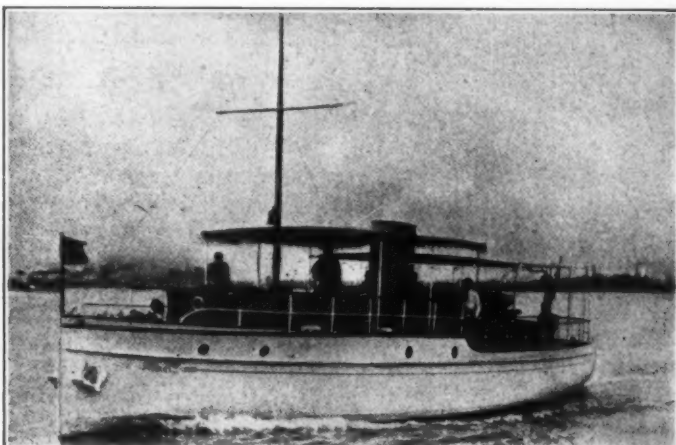
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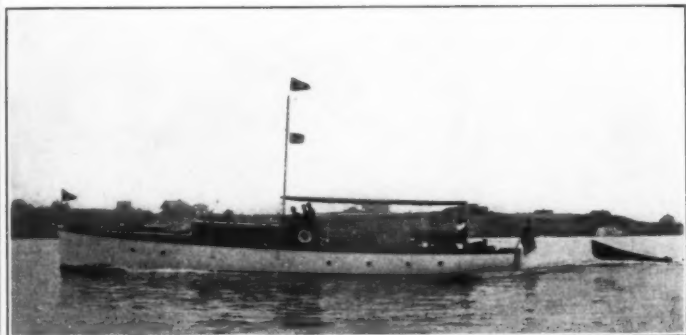


7131.—60 x 30 x 3.9. Express Coast Cruiser. Launched 1912. Stateroom and saloon berth 6. 100 h.p. Sterling engine; speed 14 knots. All modern conveniences. Very able seaboat.

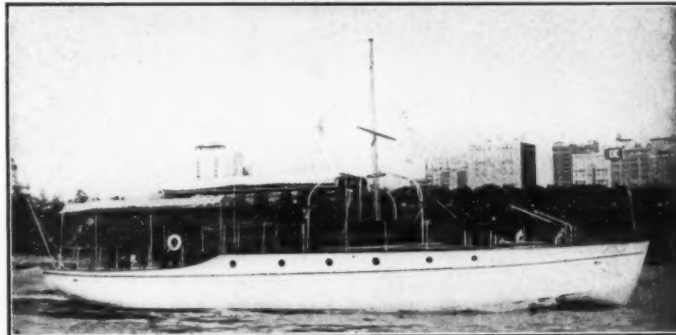
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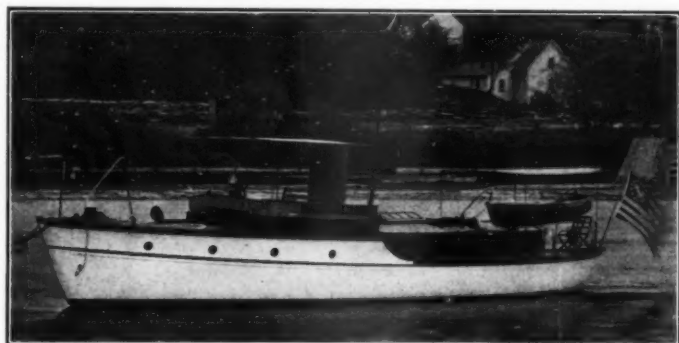
7316.—60 x 15 x 3½. Twin Screw Coast Cruiser. Launched 1912. 2 staterooms; steerage; dining saloon. Berths 8. Extra large guests' toilet room. Two 25-35 h.p. Sterling engines; speed 12 miles. Electric lights. Complete equipment. Offers extraordinary accommodations through broad beam and can be maintained with two paid hands.



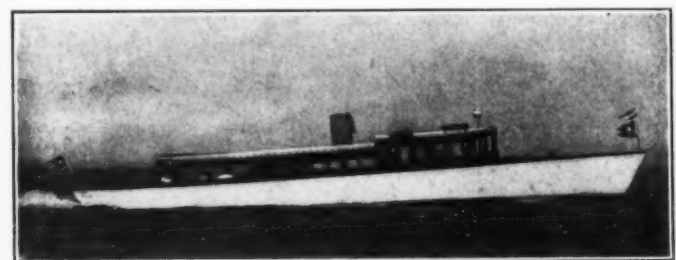
6808.—60 x 10.1 x 4.3. Seagoing Cruiser by T. E. Ferris. Double stateroom and saloon berth 6. 100 h.p. Craig; speed 12-14 miles. Electric lights. Winner Bermuda Race 1907 and 1908. Offered by estate.



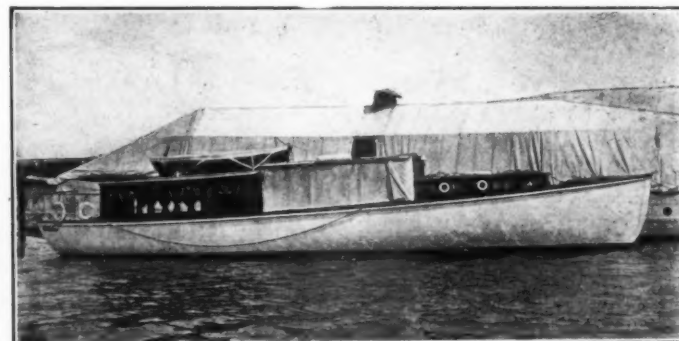
7405.—55 x 12 x 4.—Coast Cruiser. Stateroom and saloon berth 6. 2 toilets. 25 h.p. Standard engine; speed 10 miles. Electric lights. Fully equipped. Motor controlled on bridge. Always well owned.



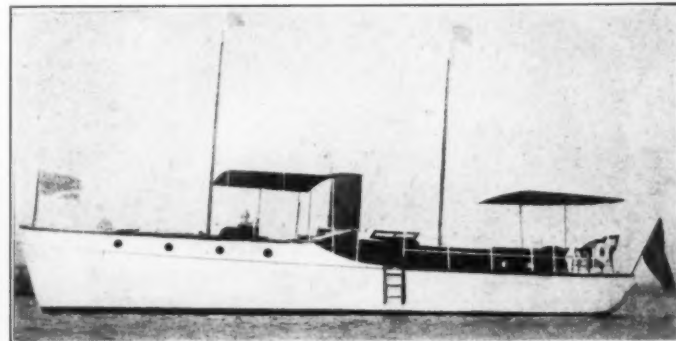
7506.—52 x 11 x 4. Coast Cruiser. Launched 1911. Swasey, Raymond & Page Design. Extra heavy construction. Large saloon and owner's stateroom (berth 5) with bath room between. African mahogany finish. Electric lights. Separate galley full width with Shipmate range and hot water tank. 25 h.p. Standard engine controlled from bridge. Speed 12 miles. Complete inventory.



7528.—55 x 8 x 3. Express Day Cruiser. Finished in solid mahogany. 150 h.p. Craig engine. Speed 23 miles. Ideal gentleman's ferry or tender.



5987.—50 x 10.8 x 3. Herreshoff Cruiser. 2 berths forward for owner. After cabin also contains 2 berths. Headroom 6½ ft. 25 h.p. Standard; speed 10 miles. Exceptionally able. Bargain.



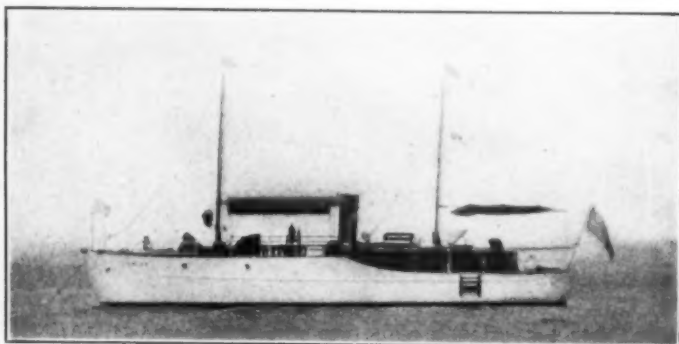
7416.—50 x 10½ x 3½. Coast Cruiser. Extra heavy construction. 2 staterooms and saloon berth 7. Mahogany interior. Electric lights. 25 h.p. Standard; speed 10 miles. Maintained with one paid hand. Able seaboat.

Prices of above yachts range from \$3,250 to \$9,000, subject to concession.

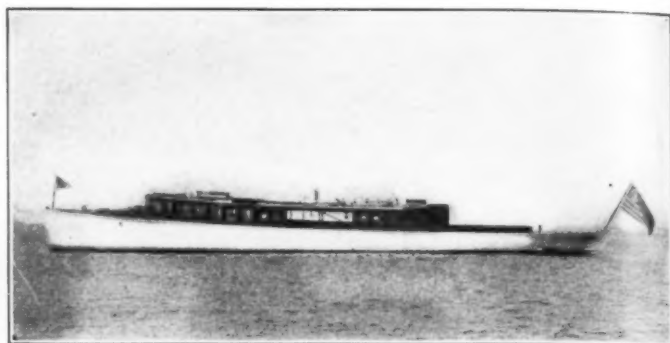
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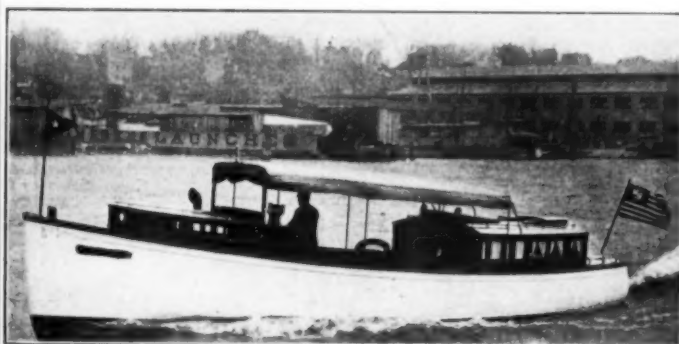
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7518.—46½ x 10 x 3½. Twin Screw Coast Cruiser. Stateroom; saloon; berths 6. Two toilets. Electric lights. Two 15 H. P. Kent motors, new 1912, controlled by steersman. Speed 9½ miles. Complete inventory. Extra heavy construction—4 watertight compartments. Cruised to Bermuda.



6216.—60 x 7½ x 3½. Express Cruiser. Suitable for racing tender. Mahogany deck house. Stateroom. Saloon. Toilet room. 69 h.p. Sterling motor, new 1910, controlled from cockpit. Speed 15 miles—guaranteed.



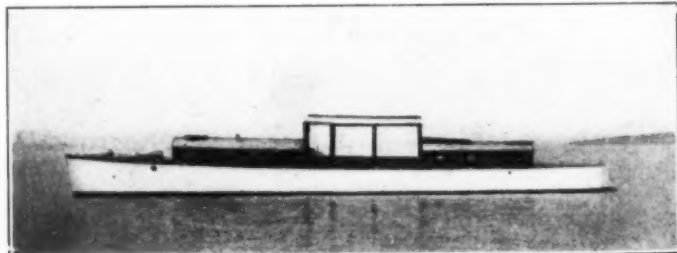
7558.—46 x 8 x 2.10. Launched 1912 by Gas Engine & Power Company. Exceptionally high-grade Speed Cruiser. Mahogany construction. After cabin berths 2. Toilet. Galley. 50-60 h.p. Speedway engine in forward cabin controlled by steersman. Speed 16 miles. Complete equipment.



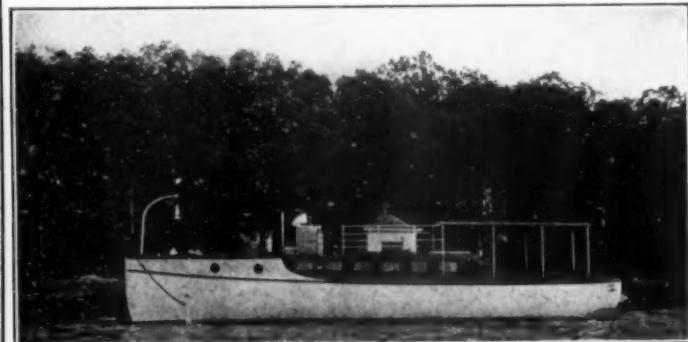
7505.—44 x 9.10 x 3½. Bridge Deck Cruiser. 2 saloons berth 4; beautifully finished in panelled mahogany. 18 h.p. Standard engine. Atwater-Kent ignition. Deck control. Speed 10 miles. Complete electric lighting plant, new 1913. Fully equipped.



7552.—42.8 x 9½ x 2.5. Coast Cruiser. Saloon and stateroom berth 4. Large toilet room. 20 h.p. Murray & Tregurtha engine. Speed 9 miles. Complete. Unusually able. Will consider trade for large power yacht or auxiliary.



7048.—45 x 6½ x 2½. Built by Seabury. Copper fastenings. After cabin berths 2. Toilet. 30 h.p. Speedway engine; speed 12½ miles per hour. Cockpit engine control. Electric lights. Ideal combination cruiser.



7403.—42 x 10 x 3. Able Coast Cruiser. Stateroom and saloon berth 4. Headroom 6 ft. 3 in. 30 h.p. Lamb engine; speed 10½ miles per hour. Steers and controls from both bridge and cockpit.



7446.—45 x 11 x 3.4. Coast Cruiser. Cabin berths 3. Berth for engineer. 45 h.p. Sterling; speed 10 miles. Complete inventory. Cruised to Florida. Very able.

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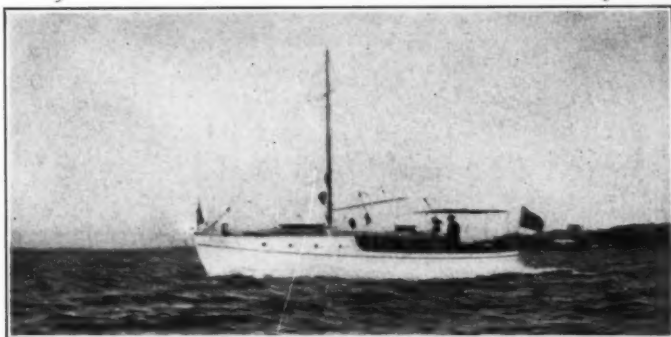
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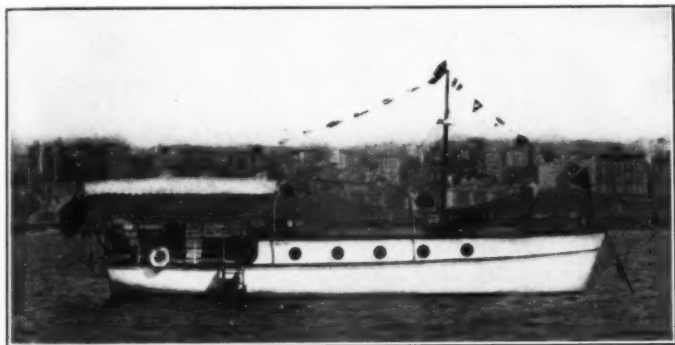
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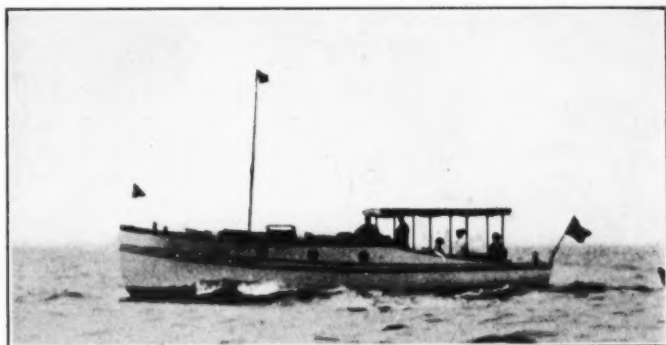
3513.—42 x 8½ x 3. Built by Gas Engine & Power Co. Berths 4. 24 h.p. Lamb engine; speed 10 miles (actual). Electric lights. Unusually complete and expensive cruising inventory. Has only had two owners since built and kept in best condition. Bargain.



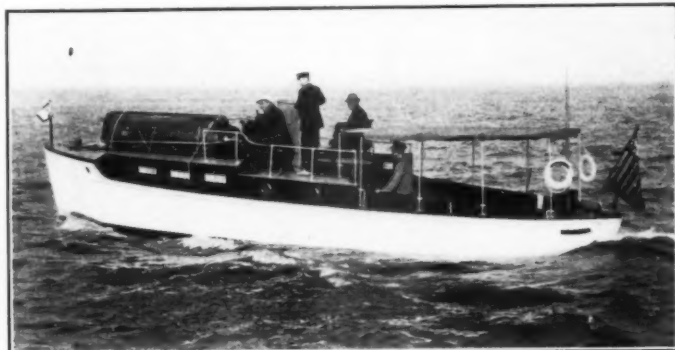
7543.—40 x 9 x 3½. Coast Cruiser. Heavy construction. Berths 4. 30-35 h.p. Murray & Tregurtha engine; speed 10 miles. Electric lights. Complete inventory. Able seaboat.



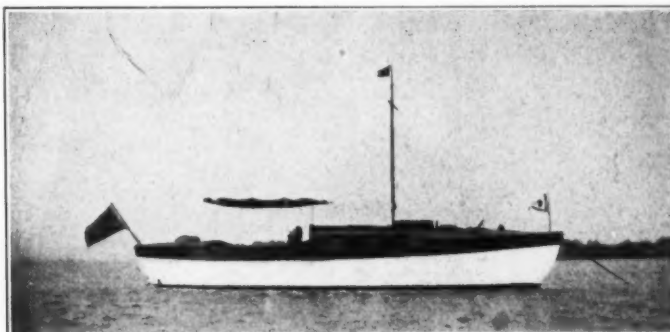
7499.—40 x 9 x 3. Cabin berths 6. Headroom 6.2 ft. 18 h.p. Standard engine; speed 9½ miles. Electric lights. Complete. Bargain.



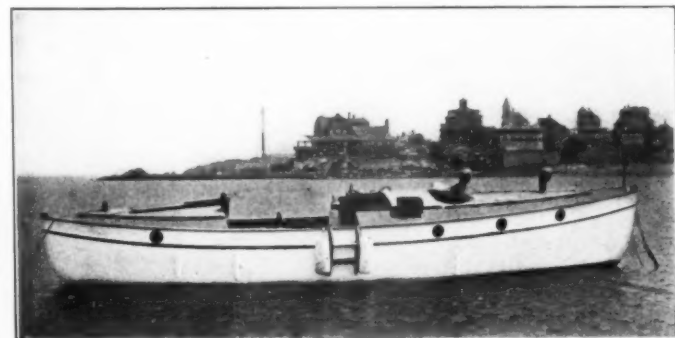
7399.—38 x 9 x 3. Launched 1911. Cabin berths 4. Headroom 6 ft. 20 h.p. engine; Speed 9 miles. Offered by Estate. Bargain.



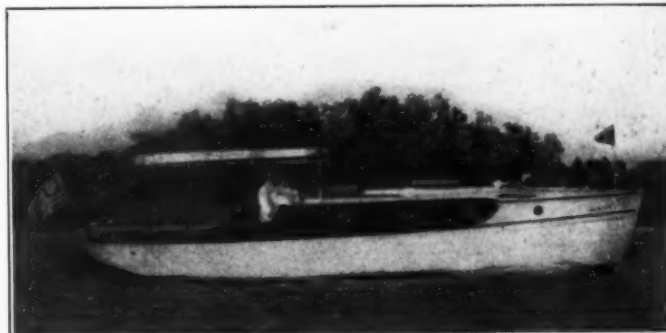
6749.—40 x 8 x 2.9. Cabin berths 4. Headroom 6 ft. 4 in. 30-45 h.p. Sterling. new 1912; speed 11¼ miles. Electric lights. Complete cruising inventory. About \$3,500 spent on boat since 1911 in permanencies. Fine racing record.



6305.—38 x 8½ x 2.8. Exceptionally able Cruiser. Cockpit engine control. Solid mahogany interior. Headroom 6 feet. Electric lights. Berths 4. 18-21 h.p. Lamb motor, new 1912; speed 10 miles. Put in practically new condition 1911-12. Elegant seaboat.



7465.—35½ x 8 x 3. Berths 4. 35-45 h.p. Sterling, new 1912 speed 12 knots per hour. Cockpit engine control. Used off Nantucket, demonstrating wonderful sea-going qualities.



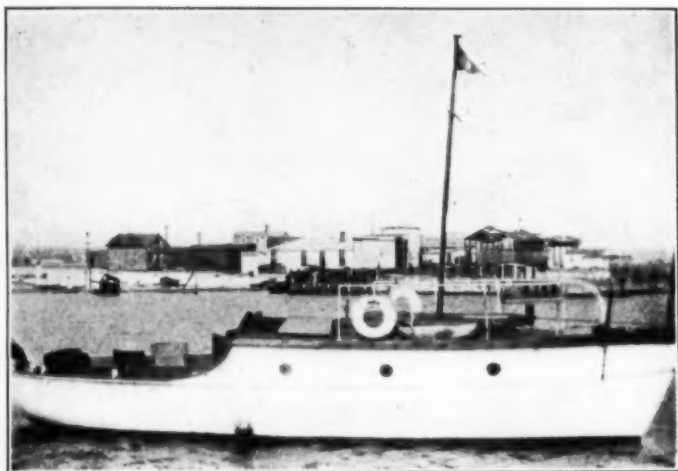
7075.—33 x 8.4 x 2½. Cabin berths 4 people. Electric lights. 25 h.p. motor. Speed 8 knots. Cockpit engine control. Complete cruising inventory. Able seaboat.

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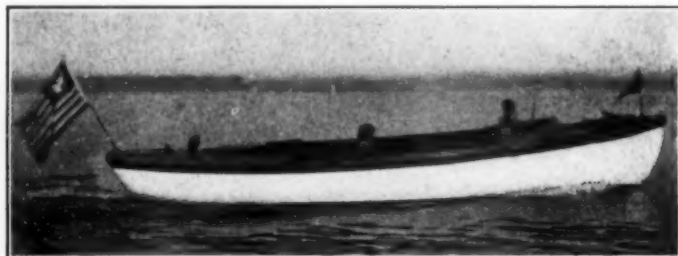
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7535.—28 x 7.2 x 2. Launched 1911. Cabin berths 4 people. Toilet. Galley space. Headroom 5 ft. 2 in. 10 h.p. motor controlled from cockpit. Speed 8 to 9 miles. Full inventory. Able single-handed cruiser.



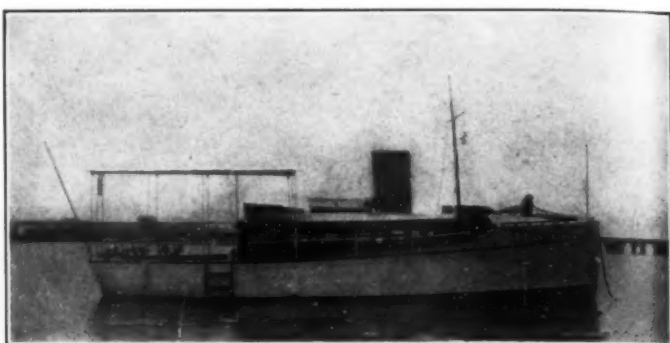
6256.—32 x 7.4. Built 1909 to owner's special requirements for service in open waters. Engine control in forward cockpit 8 feet long. Interior woodwork quartered oak, panelled. 21-28 h.p. motor works perfectly. Speed 11 miles. Electric lights. Very able and dry. Ideal for day service.



7282.—27½ x 6½ x 2½. Launched 1912. Copper riveted. 9 h.p. Fulton engine; speed 8 miles. Complete equipment, including tender. Very able. Ideal sea boat.



7554.—20-ft. Hydroplane. Built 1912 entirely of teak by Smith-Ryan Company. Considerably heavier construction than usual boat of this type. 150 h.p. Sterling engine. Speed better than 45 miles per hour. Excellent seaboat. Very successful racing record.



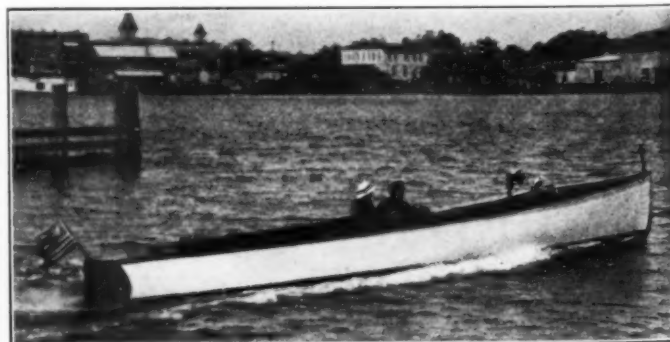
7423.—33 x 8½ x 3. Cruiser. Cabin berths 4. Toilet room. Galley. 6 feet headroom. 16 h.p. Hall engine; speed 10 miles. Electric lights. Steersman controls motor. Complete inventory. Very able craft.



7339.—35-ft. Elco DeLuxe. Mahogany planking and decks. Copper riveted. 50 h.p. American & British engine; speed 22 to 24 miles. Motor controlled by helmsman. Practically new. Cost \$4,200. Price \$2,000. Bargain.



6777.—23 x 4.11 x 1.4. Launched 1911. Brass screw fastenings. Cockpit 12 ft. long. 35-40 h.p. Vim motor, new 1912; speed 16 knots per hour. Bargain.



7545.—34½ x 5½ x 1.10. Gentleman's Speed Runabout. Built 1912. After cockpit seats 4. 40 h.p. Loew-Victor engine; speed 18 to 24 miles per hour. Whole outfit in first-class shape. Seen Florida.

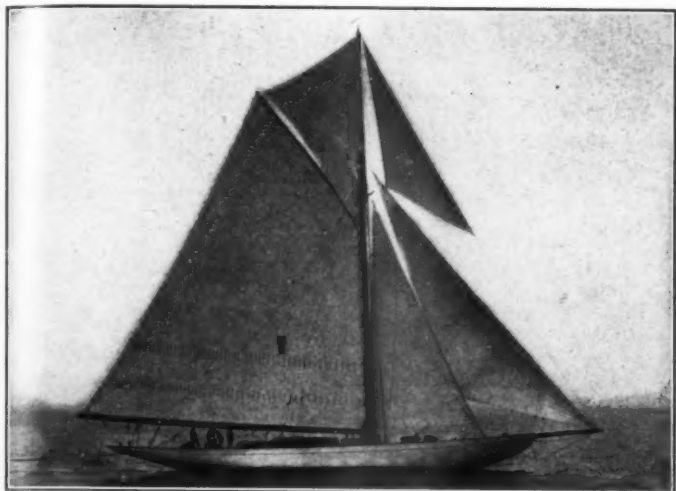
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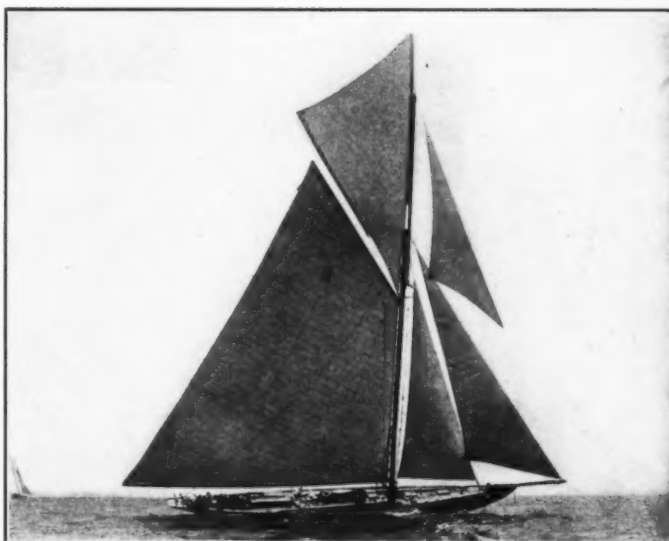
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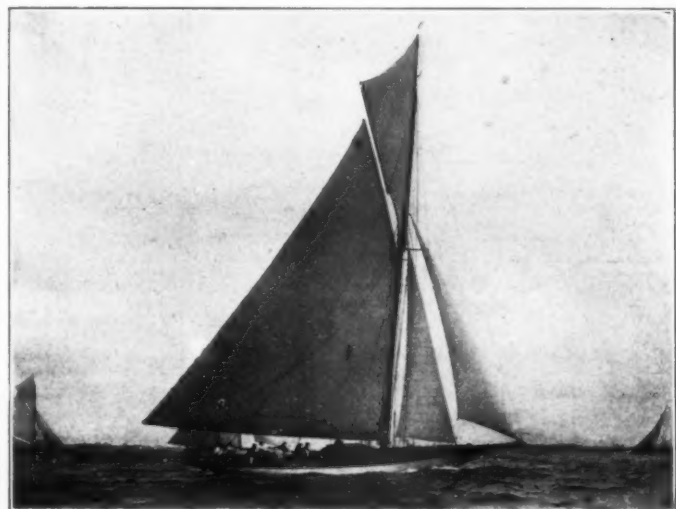
SLOOPS AND KNOCKABOUTS.



11226.—102½ x 70 x 19 x 11. Herreshoff Flush Deck Keel Cruiser. Composite construction. 45 tons lead ballast. 2 double and 2 single staterooms and saloon berth 11. Bath; 2 extra toilets. Headroom 7 ft. Luxurious cruising inventory. Comfortable cruiser and fast sailer. Has had little use.



11539.—85.3 x 62 x 16.7 x 10.10. Herreshoff Keel Flush Deck Cruiser—Racer. Composite construction. Lead ballast. Good cruising accommodations. Complete inventory—Ratsey sails.



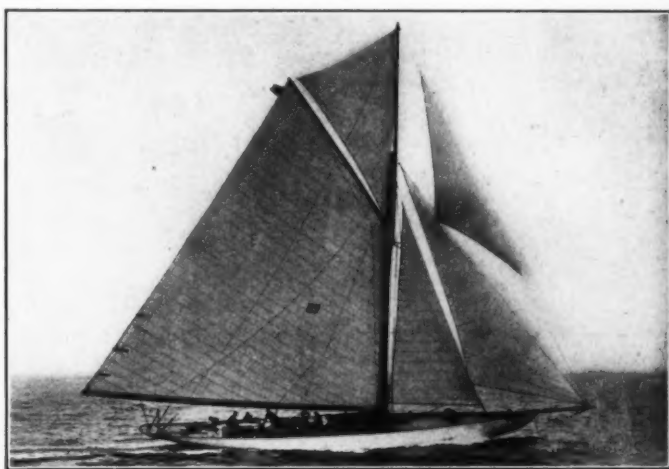
11469.—74.9 x 53 x 14½ x 9. Herreshoff Flush Deck Keel Cruiser. Composite construction. Lead ballast. Double stateroom and saloon berth 6. Complete inventory—new sails, etc. Very successful racing. Always well owned.



11697.—72 x 50 x 14½ x 9.9. Keel Flush Deck Cruisers. N. Y. Y. C. 50-ft. Class. By Herreshoff. 1 double and 1 single stateroom; large saloon. 2 toilet rooms. Complete inventory—new Ratsey mainsail 1914.



11255.—76 x 46 x 14½ x 10½. Herreshoff Flush Deck Keel Cruiser. Double planking. Oak and steel frames. 10 tons lead ballast. Stateroom and saloon berth 5. 2 toilets. Complete equipment. Bargain.



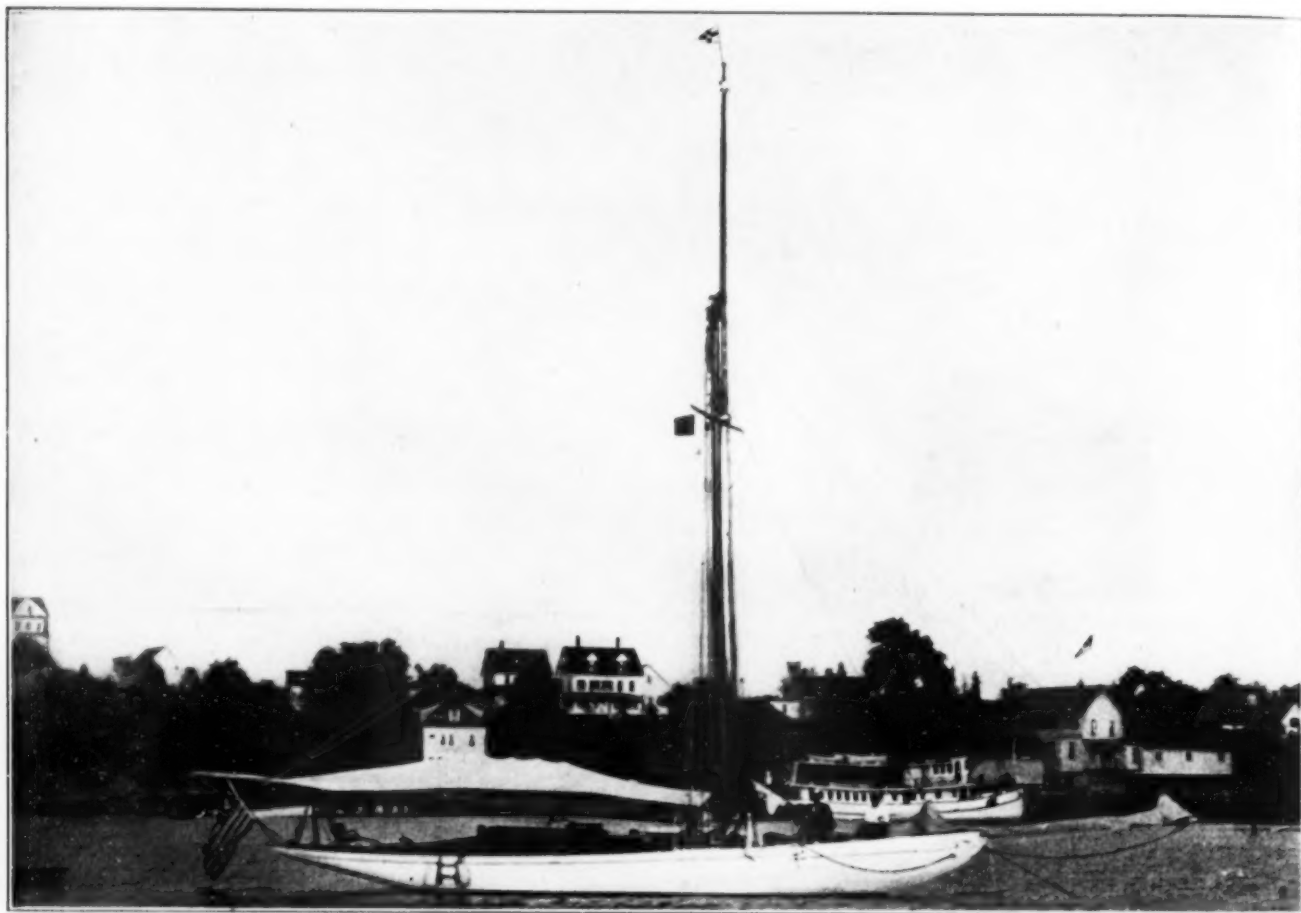
11334.—73 x 45 x 14.3 x 10. Herreshoff Flush Deck Keel Cruiser. Composite construction. Steel frames and fastenings. 20 tons lead ballast. Double stateroom and saloon berth 6. Full cruising inventory—2 tenders—launch, new sails, etc.

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11577.—55 x 35 x 13 x 6. Keel. Designed by T. E. Ferris. 2 double staterooms and saloon berth 8 people. Headroom 6½ feet. Mahogany interior. A beautiful model, exceptionally well built. Copper fastenings, mahogany deck trim. Complete inventory. Able seaboat, capable of any sort coast cruising.



11607.—67 x 45½ x 13 x 9. Herreshoff Flush Deck Cruiser. Composite construction. 14 tons lead ballast. Double stateroom and saloon berth 6. Captain's room. 2 toilets. Complete racing and cruising inventory—2 suits sails.



11614.—59½ x 42 x 13.4 x 8.10. Keel Cruiser. Lead ballast. 2 staterooms and saloon berth 6. 2 toilets. Elegant cruising inventory renewed 1913. Very fast sailer and comfortable cruiser. \$5,000 spent 1913, thoroughly overhauling boat from stem to stern, re-furnishing interior complete and of the finest procurable. Sacrificed.

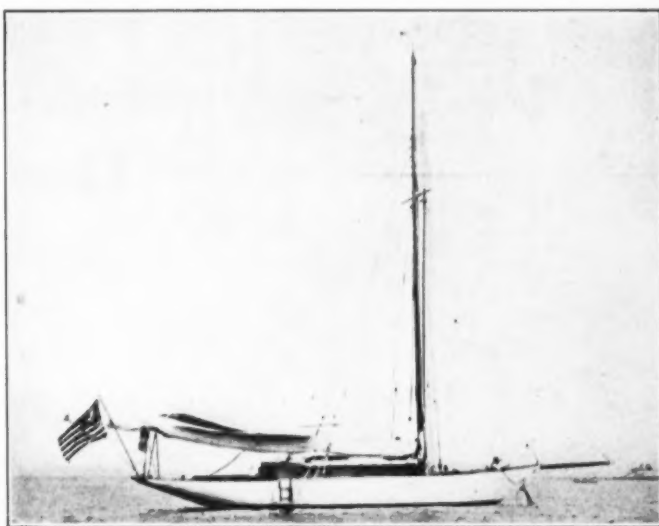
Prices of above yachts range from \$2,000 to \$4,500, subject to concession.

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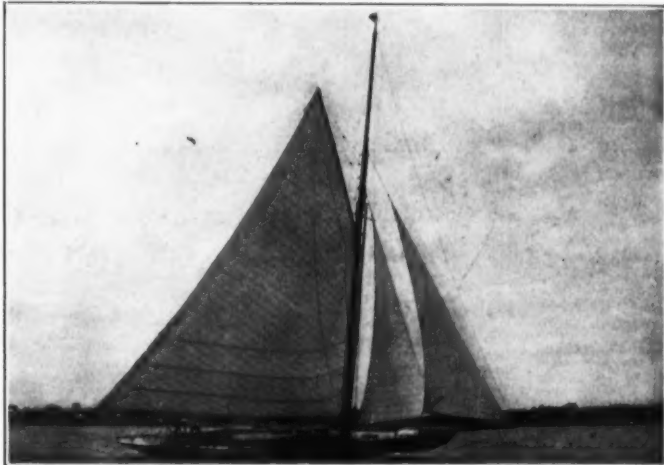
11149.—56 x 39 x 12½ x 8. Herreshoff Keel Cruiser. Lead ballast. Best construction. Cabin berths 4 comfortably, or 6 if desired. Acetylene light. Complete cruising inventory—Ratsey sails. An exceedingly attractive craft, smart sailer and comfortable cruiser, economically maintained.



11281.—55 x 35 x 12 x 8. Keel Coast Cruiser. Lawley construction. Lead ballast. 2 staterooms and saloon berth 6. 2 toilets. Acetylene light. Complete inventory. Smart able seaboat.



11550.—59½ x 39 x 11.3 x 7½. Keel Cruiser. Lead ballast. Double stateroom and saloon berth 6. 2 toilets. Headroom 6 ft. 2 in. Good inventory—2 suits Ratsey sails, 1 new 1913; launch and dinghy. Crew 2. Fine racing record.



11557.—53 x 35 x 12 x 7.10. Keel Cruiser. Lead ballast. Exceptionally well constructed. Stateroom and saloon berth 5. New sails 1912. Launch tender. Excellent cruiser and smart sailer. Bargain.



11643.—52 x 33 x 10 x 7. Keel Sloop. Class P. Double planked. Lead ballast. Cabin berths 4. Toilet room; galley. 2 berths for crew. Full inventory—4 suits sails, 3 new 1913.



11645.—50 x 34 x 9.10 x 7. Herreshoff Sloop. P Class. Copper and bronze fastenings. Lead ballast. Cabin berths 3. Toilet room. Galley with all conveniences. 2 berths for crew. Full inventory.

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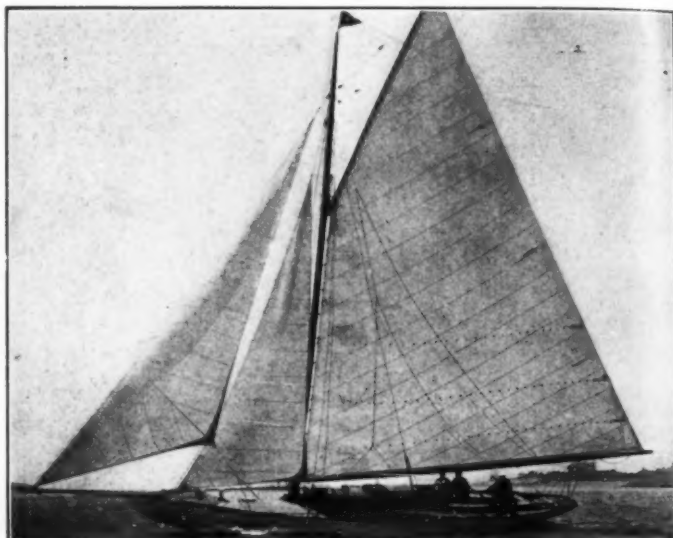
11344.—46½ x 31 x 14 x 3½. C. B. Cruiser. Heavy construction. Stateroom and saloon berth 5. Headroom 6 ft. 2 berths in fore'sle; can be run with one paid hand. Fully equipped. Bargain.



11693.—43½ x 30 x 8.10 x 6.3. N. Y. Y. C. 30-ft. Class. Double planked. 5 tons lead ballast. Cabin berths 4. Toilet. Galley. Fast, seaworthy and easily handled. Complete inventory—4 suits sails.



11345.—40 x 25 x 10 x 4½. C. B. & K. Copper fastenings. Lead ballast. Cabin berths 4 people. Toilet with w. c. and wash basin. 2 berths forward. Complete cruising inventory, including tender. Fast sailer and consistent cruiser.



11657.—46½ x 30 x 10.10 x 5½. C. B. Herreshoff Cruiser. Buzzards Bay 30-ft. class. 5 tons lead keel. Cabin berths 4 people. 2 berths forward. Double planked. Copper and bronze fastenings. Complete equipment. Very successful type; smart sailer and consistent cruiser.



10211.—46 x 30 x 12½ x 7. Keel Cruiser. Lead ballast. Mahogany deck trim. Saloon berths 4. Toilet and galley. Mahogany interior. Headroom 6 ft. 2 in. 2 berths in fore'sle—crew 1. Full inventory. Very fast sailer and able cruiser.



10400.—40 x 26 x 10½ x 4.8. C. B. & K. Cruiser. Very substantially constructed. Cabin berths 4. Galley with all conveniences. Toilet room. Headroom 6 ft. 2 in. Complete equipment—2 suits sails. Handles easily under all conditions. Smart sailer and consistent cruiser.

Prices of above yachts range from \$750 to \$2,000, subject to concession.

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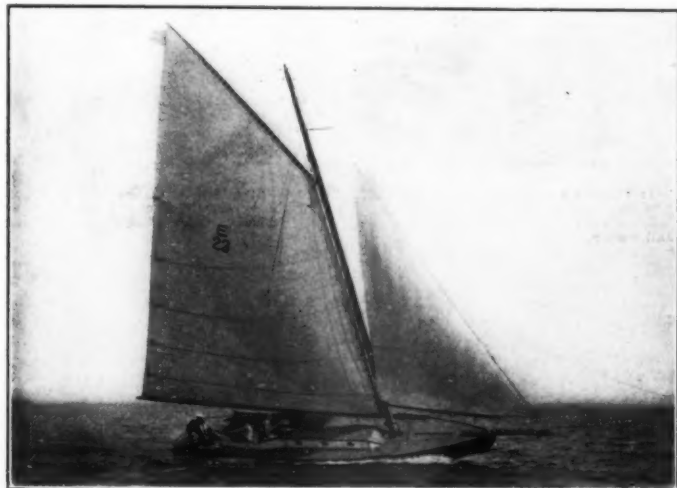
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11466.—41 x 25 x 10 x 7½. Lawley Keel Cruiser. Lead ballast. Cabin berths 3 people. Toilet. Galley. Complete equipment. Wilson & Silsby sails. Fast sailer.



11445.—33 x 22 x 7 x 5-4. Keel Raceabout. Class R. Built by Robert Jacob from Mower's design. Double planking, brass screw fastenings. Cabin berths 3. Toilet. Ratsey sails, hollow spars. Successful racing record. Original cost \$2,600.



11486.—38 x 22 x 9 x 6-10. Keel Knockabout from Crowninshield's design. Copper fastenings. Lead ballast. Cabin berths 4. Headroom 6 ft. Fast sailer and good cruiser.



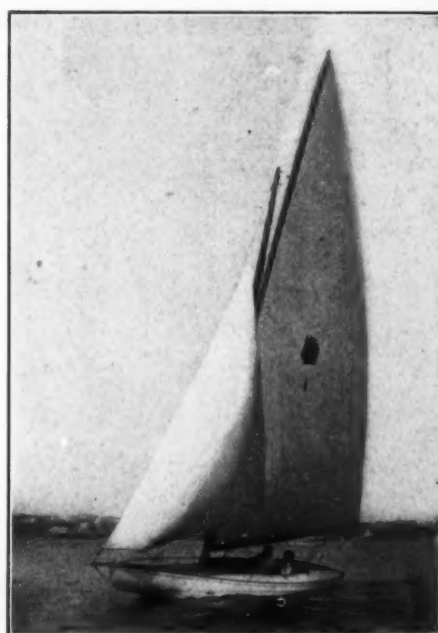
10969.—28.10 x 19.3 x 6½ x 4-10. Keel Knockabout. Jewel One Design Class. Built by Robert Jacob, City Island. Mahogany planking. Lead ballast. Ratsey sails. Very able. Splendid for day sailing and racing.



11287.—33½ x 22 x 8½ x 3½. C. B. & K. Cruiser. Built by Lawley from Mower's design. 2 berths in cabin. New toilet 1912. Lead ballast. Complete inventory. Able cruiser and smart sailer.



11613.—33 x 21 x 9½ x 3½. Handsome Sloop. Designed by Hand. C. B. houses in keel. Self-bailing cockpit. Cabin berths 4. Running water. Tender. Exceptional equipment.



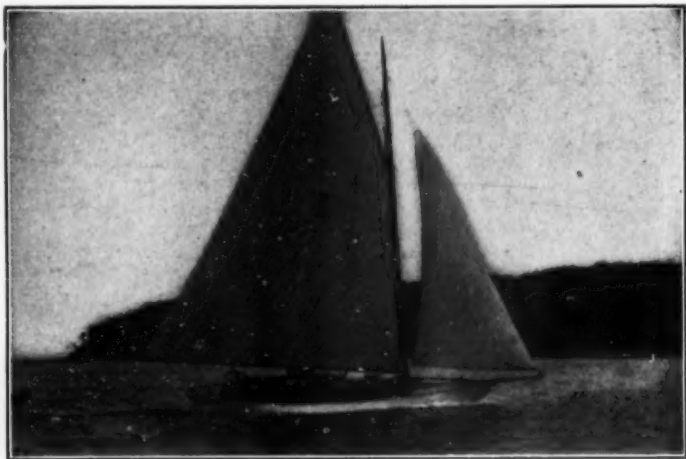
11566.—31 x 18 x 7½ x 5.—Keel Knockabout. Built 1911. Mahogany trim. Hollow spars. 2 suite sails new 1912—1 by Ratsey. One of the fastest 18-footers available. Winner Narragansett Bay Championship 1911.

Price of above yachts range from \$500 to \$1,500, subject to concession.

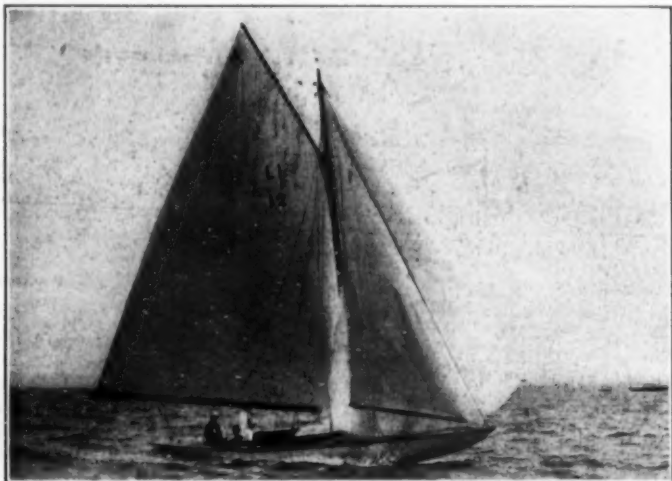
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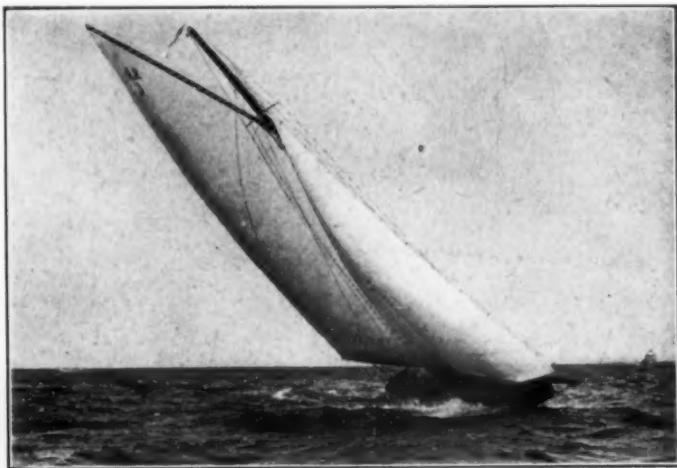
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11176.—31½ x 21.9 x 9.3 x 4.3. Keel Knockabout. Heavy construction. Cabin berths 4. Toilet room. Galley. Lead keel. Full inventory. Always well owned. Safe cruiser.



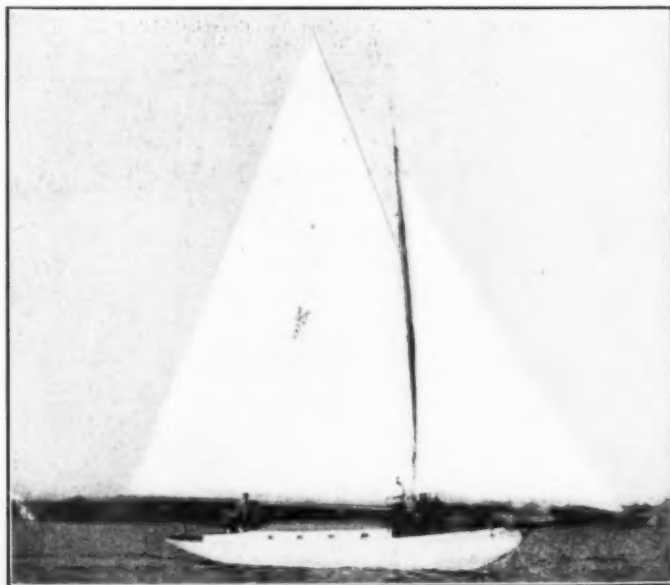
11367.—33½ x 21.4 x 8 x 5. Keel. Larchmont Y. C. Interclub One Design Jib & Mainsail. Copper fastenings. Ton lead on keel. 2 suits sails. Ideal type for day sailing. Very fast and able.



11364.—33 x 21 x 7.8 x 5½. Keel. American Y. C. One Design Knockabout. Crownshield design. 3,300 lbs. lead on keel. New sails 1912; hollow mast. Very successful racing on L. I. Sound.



11686.—22 x 13.9 x 6 x 3.10. Keel Knockabout. Stamford Y. C. One Design Class. 900 lbs. lead keel. Copper fastenings. Water-tight bulkheads fore and aft. 2 suits sails, one by Ratsey 1913; old suit 1912. Bronze blocks. Fine class for day sailing and racing.



10912.—39 x 25 x 11 x 5.4. C. B. & K. Cruiser. Designed by T. E. Ferris. Heavy construction. Cabin berths 4. Toilet room with w. c. and wash basin. Headroom 6 ft. 4 in. Complete inventory. Very able cruiser.

Prices of above yachts range from \$250 to \$1,400, subject to concession.

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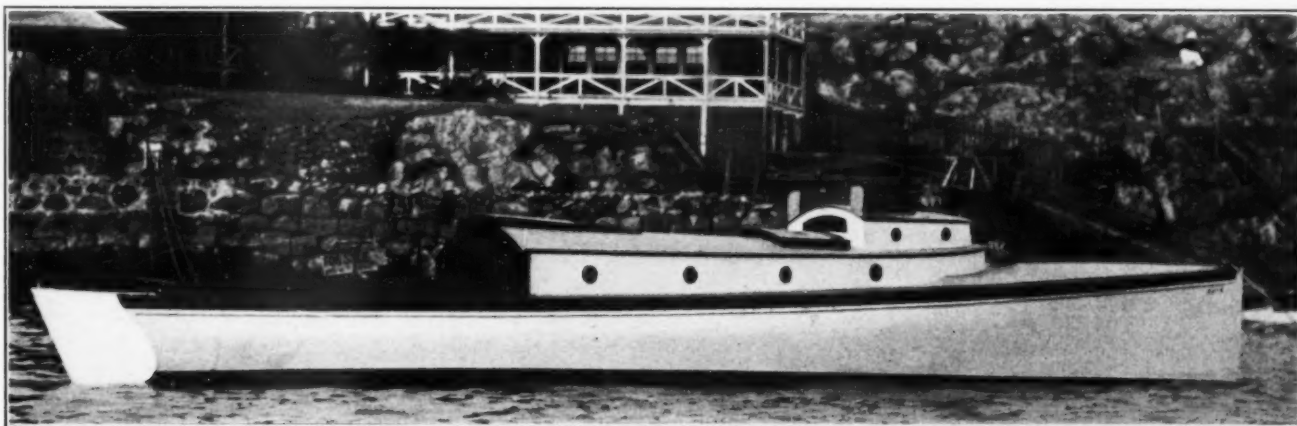
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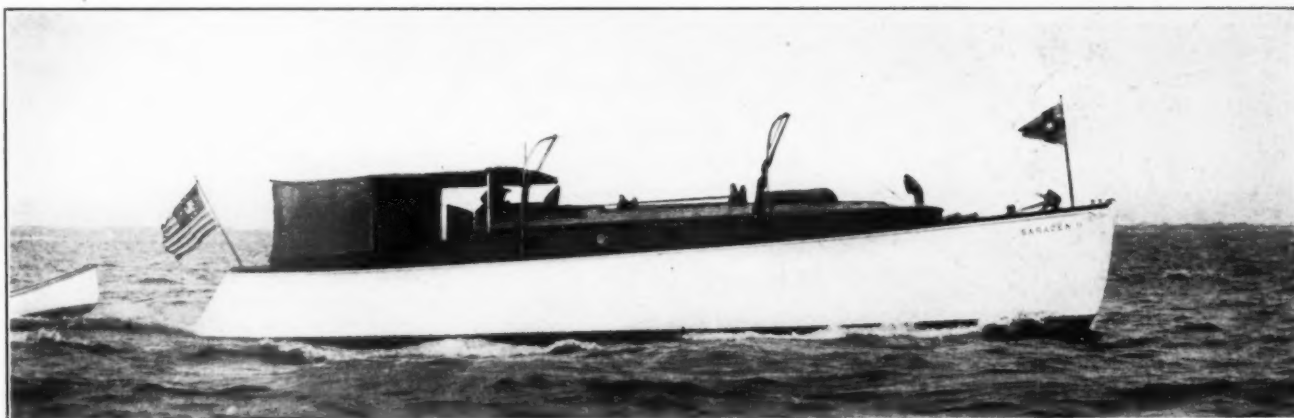
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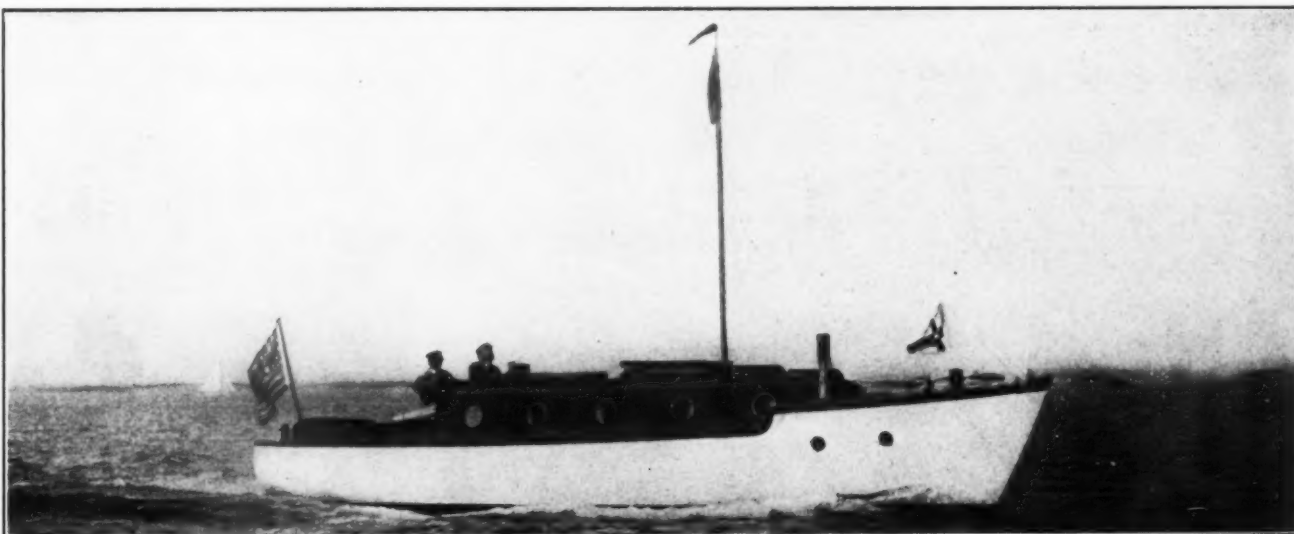
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FOR SALE.—42 foot cabin cruiser, 9 feet beam, 3 feet 6 inches draft; large cabin with 6 feet 3 inches headroom, sleeping six people. Equipped with a 1913 32 H. P. Ideal motor which drives her nine knots. Unusual bargain. Inspectable in Boston. Apply to Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.



FOR SALE.—35 foot cabin cruiser. Built by Britt Brothers in 1908; equipped with a 24 H. P. 1910 Tuttle motor; large cabin and roomy cockpit; mahogany finish throughout; controlled entirely from cockpit. Complete cruising equipment. Inspectable in Boston. Apply to Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.

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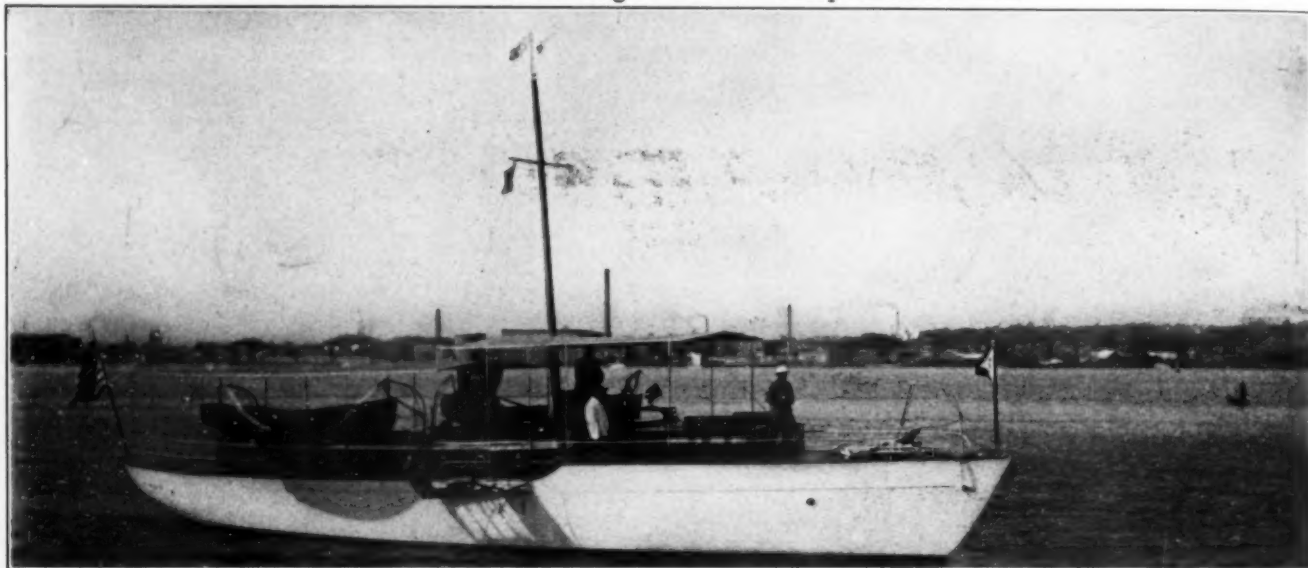
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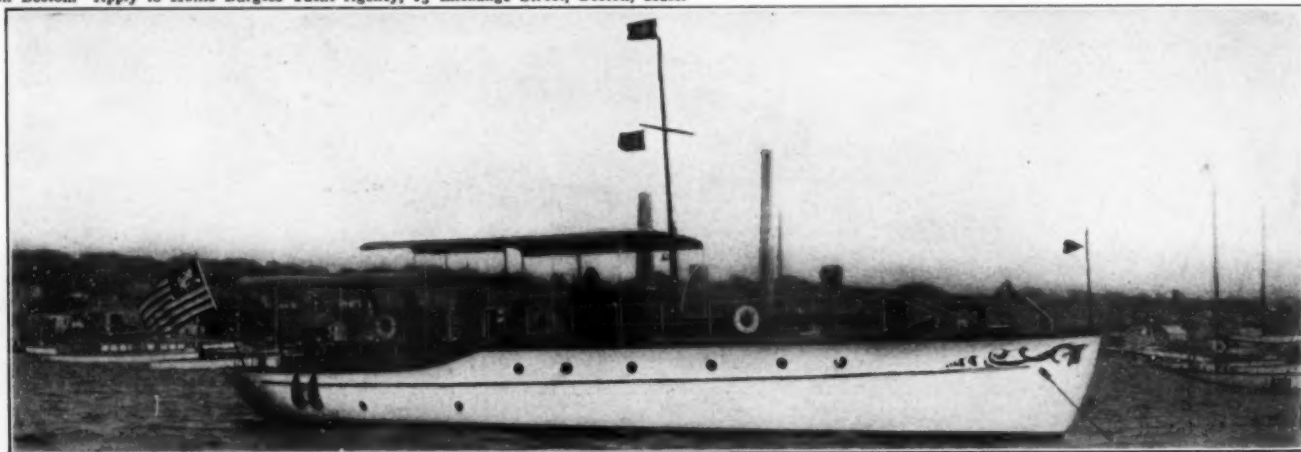
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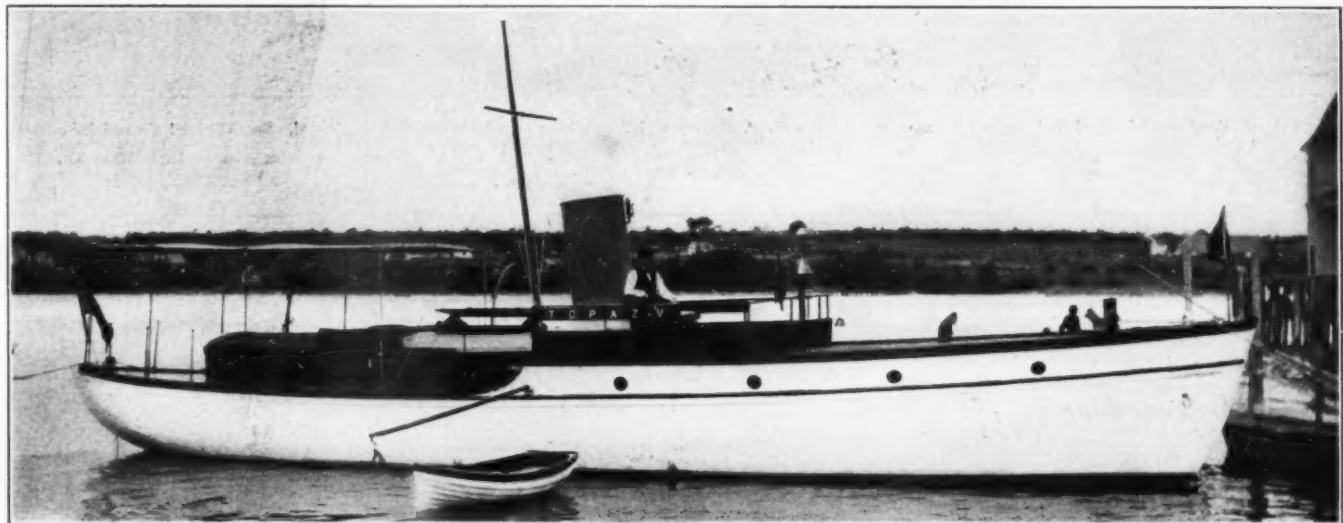
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FOR SALE.—90-foot cruising motor boat. Able to go anywhere in any weather. Very heavily constructed and a splendid seaboat. Sixteen ft. beam, 4 ft. 7 in. draft. Two Murray and Tregurtha motors of 50 h.p. each. Speed 10 knots an hour. Palatial cabin with 7 ft. 6 in. headroom. Four staterooms. Carries three boats, one a power tender. This is one of the best large motor boats ever built, powerful, comfortable and well built. Ideal boat for Southern cruising. Can be bought at a low figure as owner is going abroad. Inspectable near Boston. Apply to Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.



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FOR SALE.—50-foot modern power cruiser. Designed and built by Luder's Marine Construction Co., Portchester, N. Y., in 1911. 44 h.p. "20th Century" motor. Roomy cabin with two staterooms. Can be seen in Boston by applying to Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.

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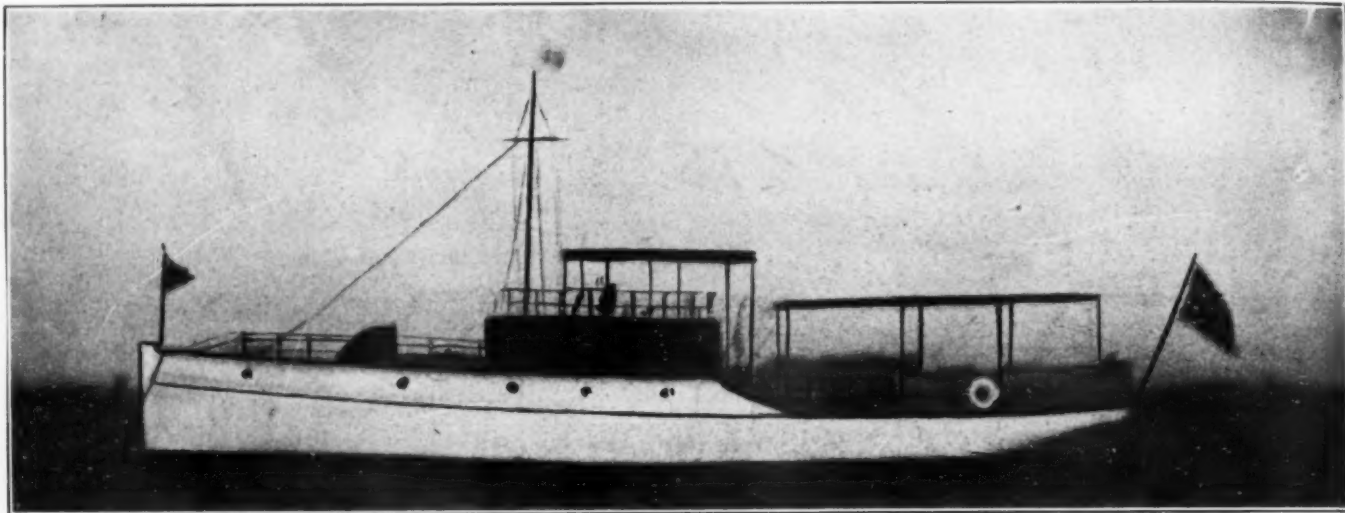
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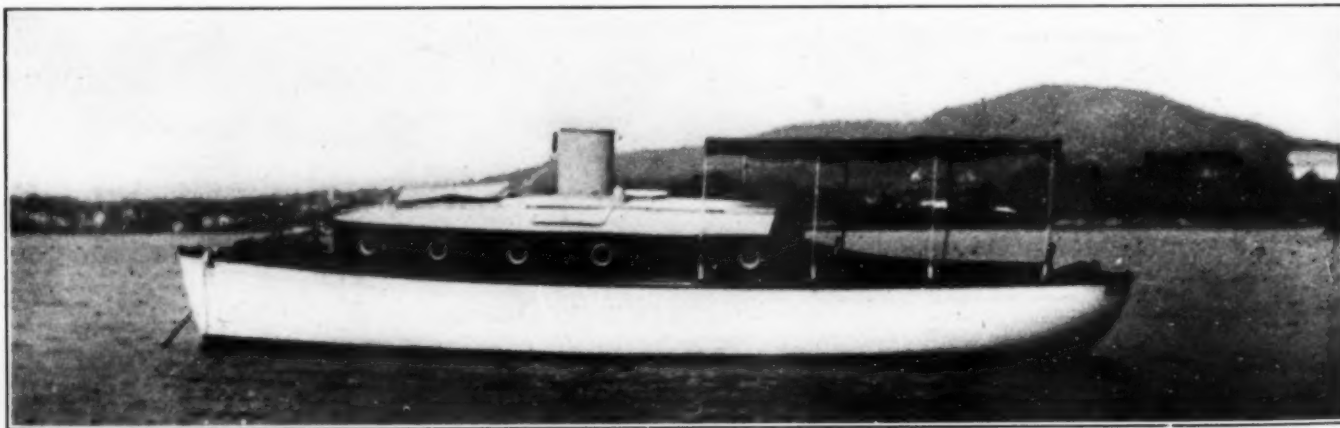
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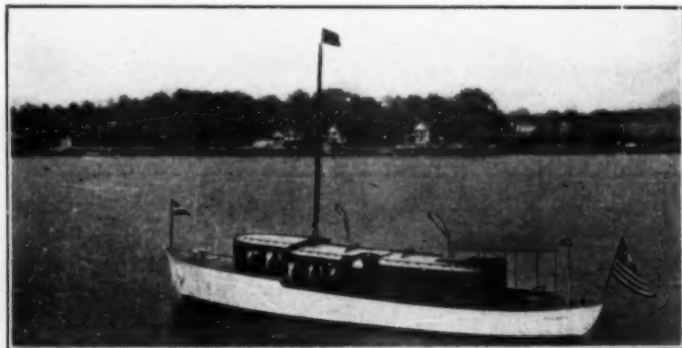
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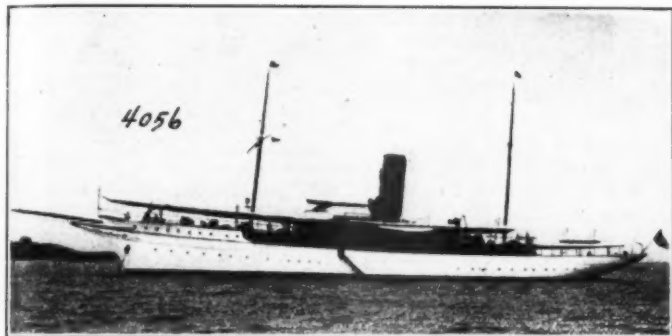
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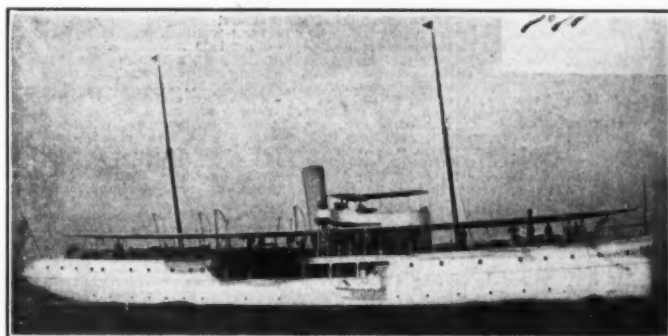
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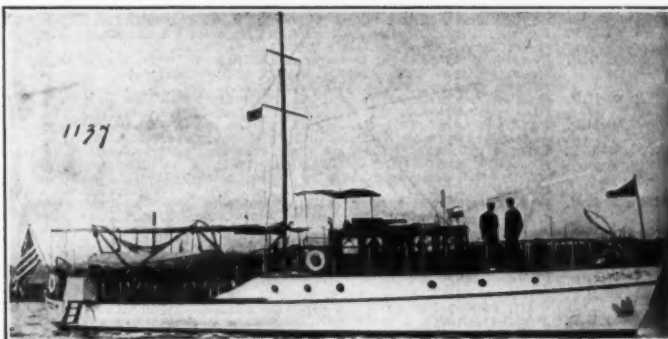
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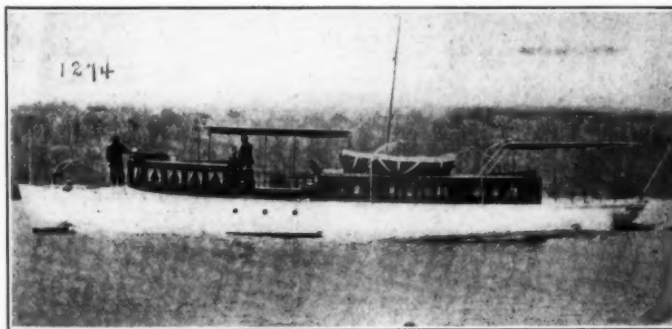
No. 3835.—175-ft. Ocean-going steam yacht. Nine large staterooms; speed 16 miles.



No. 2862.—Steam auxiliary; steel; 170 ft.; splendid accommodation. Ideal vessel for extensive cruising.



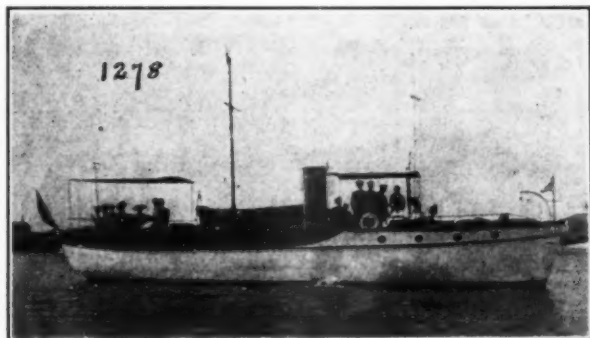
No. 1137.—62-ft. twin-screw cruiser. Three staterooms, saloon and pilot house; three toilets; electric lights. Speed, 10-12 miles. Suitable for Florida waters. Low price.



No. 1274.—70-ft. cruiser. Double stateroom, large saloon, berth six. 60 H. P. Standard motor. Speed, 12-13 miles.



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1278.—50-ft. cruiser. Two staterooms, saloon. Standard motor. Electric light. Speed 10 miles.



1416.—42-ft. cruiser. Sleeps five. Standard motor. Electric light.

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150-180 H.P. Sterling, 8 cyl., 4 cycle, high speed racer, 1912, perfect condition, shaft, propeller, model L Schebler carburetor, Bosch magneto, reverse gear, 1 1/2 to 1 gear box, 5 1/2 x 6 1/2, weight 1400 lbs.....	2000	15 H.P. Minnus, 2 cyl., 2 cycle, 1910, reverse gear, magneto, coil, carburetor, muffler, tools, propeller outfit.....	200
130 H.P. Jager, 6 cyl., 4 cycle, type N, 400 H.P.M., 8 1/2 x 12, new, 20" shaft, electrical outfit, propeller, stern bearing and stuffing box, weight 7200 lbs. (cost \$4750.00).....	2500	15 H.P. Parker 3 cyl., 2 cycle and outfit less shaft.....	140
120 H.P. Twentieth Century, 6 cyl., 4 cycle, 9 x 10, gear, magneto, carburetor, coil, propeller, etc., less shaft, 1907, rebuilt and like new, A-1.....	2500	15 H.P. Fairbanks-Ferro, 2 cyl., 2 cycle, reverse gear, 12" bronze shaft, propeller, coil, carburetor.....	175
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100-125 H.P. Emerson, 6 cyl., 2 cycle, high speed, Atwater-Kent ignition, clutch, carburetor.....	625	12 H.P. Palmer, 2 cyl., 2 cycle, 1910, reverse gear, magneto, coil, carburetor, muffler, propeller.....	125
90 H.P. Truscott, 6 cyl., 6 x 7, high speed.....	900	12 H.P. Lackawanna, 2 cyl., 2 cycle, 1910, carburetor, coil, shaft, propeller, Waltham Orient, 2 cyl., 4 cycle, V-type air cooled with coil, carburetor.....	90
75 H.P. Twentieth Century, 9 x 10, reverse gear, magneto, propeller, coil, 4 cyl.....	1500	12 H.P. Brennan, 2 cyl., 4 cycle, horizontal opposed, special model 7, brand new, starting handle, 5 x 6, spark plugs, carburetor.....	185
75 H.P. Trebert, 4 cyl., 4 cycle, new Bosch magneto, Dual system, Schebler carburetor, Paragon gear, 6 1/2 x 8.....	1000	12 H.P. Clay, 2 cyl., 4 cycle, new, 1913, with outfit, 5 1/2 x 6 1/2.....	375
60 H.P. Sterling, model D, 6 1/2 x 8, 1910, rebuilt, No. 206,095, Bosch magneto and magnetic make-and-break and jump spark, double ignition, coil, propeller, stuffing box, stern bearing, reverse gear.....	1500	12 H.P. White, 4 cyl., 4 cycle, coil, carburetor, 4 1/2 x 5, reverse gear, propeller outfit.....	275
60-70 H.P. Brown, 6 cyl., 2 cycle, 1900, A-1 condition, Atwater-Kent Ignition, Bosch high tension magneto, Kingston carburetor, 5 1/2 x 4 1/2, aluminum base, 800 lbs., factory overhauled, like new.....	500	12 H.P. Tottenville, 2 cyl., 2 cycle, with shaft, propeller.....	275
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50-65 H.P. Standard, 4 cyl., 4 cycle, reverse gear, magneto, 8 x 10.....	900	10-12 H.P. Van Epps, 2 cyl., 2 cycle, 1912, A-1 condition, 18" three-blade propeller, coil, Holley carburetor, 4 1/2 x 4 1/2.....	175
50 H.P. Globe, 4 cyl., 4 cycle, 8 1/2 x 10, with reverse gear and outfit, less shaft, stuffing box and stern bearing.....	1000	10-12 H.P. Verelme, 2 cyl., 4 cycle, 5 x 5, weight, 650 lbs., make-and-break and jump spark, Roper safety rev. propeller outfit, 7" x 8" bronze shaft, coil, Schebler carburetor, 2 stuffing boxes.....	210
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40-60 H.P. Roberts, 6 cyl., 2 cycle, 1910, 4 1/2 x 5, electrical equipment, jump spark Van Epps, 4 cyl., 1912, like new, Holley carburetor, propeller, steel shaft, 5 x 5, weight 400 lbs., coil.....	400	10 H.P. Palmer, 2 cyl., 4 cycle, 1910 model M-2, 5 x 6, reverse gear, Schebler carburetor, muffler, Hendricks magneto, propeller outfit, rebuilt in 1912.....	185
40 H.P. American-British, 4 cyl., 4 cycle, 5 x 4 1/2, 1000 H.P.M., coil, propeller, carburetor, gear, new, 550 lbs.....	450	9 H.P. Eagle, 2 H., 1912 model, brand new with Schebler carburetor, muffler and tools, 3 1/2 x 3 1/2, 2 cyl., 2 cycle.....	85
40 H.P. Peerless, 4 cyl., 4 cycle, 1910, A-1 condition, Elsmann coil and magneto (high tension), carburetor, Paragon gear, 4 1/2 x 5 1/2, 570 lbs., aluminum base.....	500	8 H.P. Waltham Orient, 2 cyl., 4 cycle, V-type air cooled with coil, carburetor, starting crank, spark plugs, Gies gear.....	65
40 H.P. Roberts, 4 cyl., 2 cycle, 1912, nearly new, coil, carburetor, Bosch magneto.....	450	8 H.P. Ackers, 2 cyl., 2 cycle, coil, carburetor, propeller, make-and-break.....	65
40 H.P. Brownell, 4 cyl., 4 cycle, 1908, A-1 condition, electrical outfit, carburetor, magneto and gear, 6 1/2 x 6.....	450	8 H.P. Baldwin, single cylinder, 2 cycle, coil, carburetor, Bathbridge reverse gear, still muffler, wireless propeller.....	100
37 1/2 H.P. Automatic, 3 cyl., 4 cycle, 7 1/2 x 9, reverse gear, Schebler carburetor, 6" of 1 1/2" bronze shaft, 32 x 30, 3 blade propeller, stuffing box, stern bearing, M. & B., overhauled.....	650	8 H.P. Little Giant, 2 cyl., 2 cycle, 1910, coil, carburetor, spark plugs.....	60
32-40 H.P. Emerson, 4 cyl., 2 cycle, aluminum base, Webster magneto, Paragon gear, propeller, coil, carburetor.....	350	8-10 H.P. Lackawanna, lighting outfit, Diehl dynamo (50-16 c. p. lights).....	250
30 H.P. Van Epps, 3 cyl., 2 cycle, 1913, used 3 weeks only, like new, 3 x 5, weight 300 lbs., coil, Rayfield carburetor.....	250	8-10 H.P. Little Giant, 2 cyl., 2 cycle, 1910, coil, carburetor, spark plugs.....	60
29 H.P. Lackawanna, 4 cyl., 2 cycle, 1911 model, good condition, Orswell ignition, 2 Schebler carburetors, 4 1/2 x 4 1/2, weight 475 lbs., aluminum base.....	280	8 H.P. Tuttle, 2 cyl., with reversible propeller outfit, coil and muffler, thoroughly overhauled.....	100
28 H.P. Eddystone-Globe, 4 cyl., 2 cycle, gear, Schebler carburetor, propeller and coil.....	350	8 H.P. Toquet, 2 cyl.....	65
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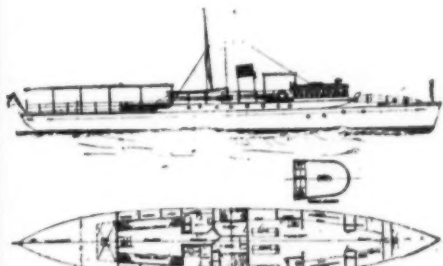
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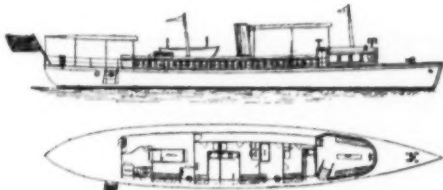
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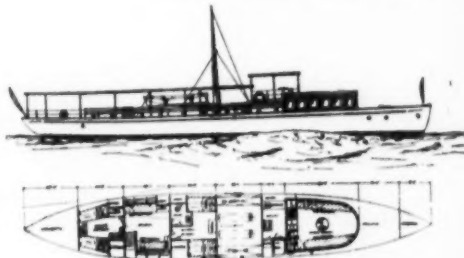
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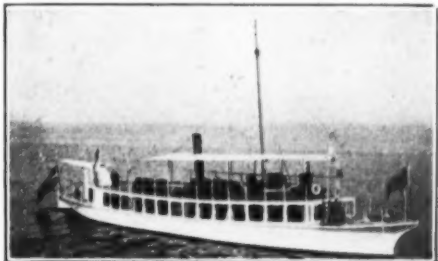
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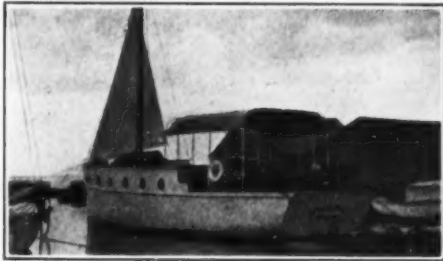
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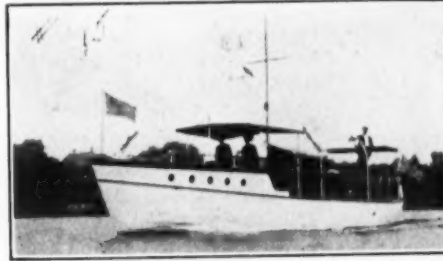
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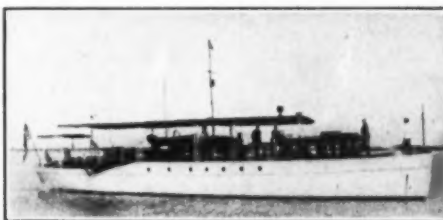
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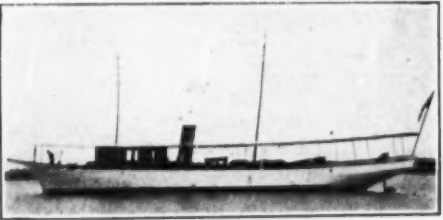
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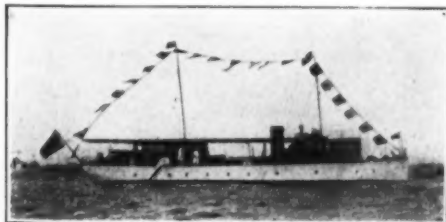
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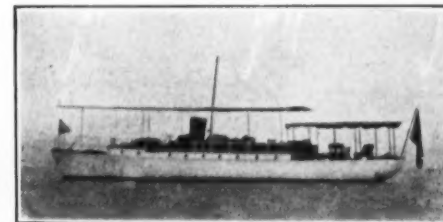
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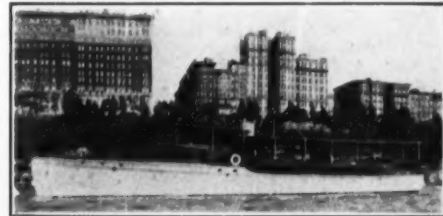
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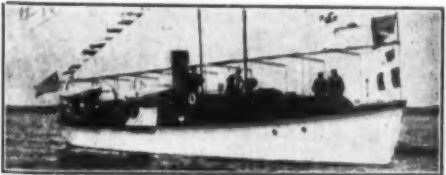
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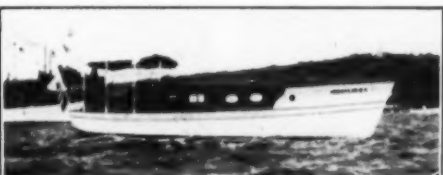
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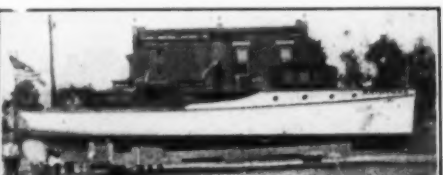
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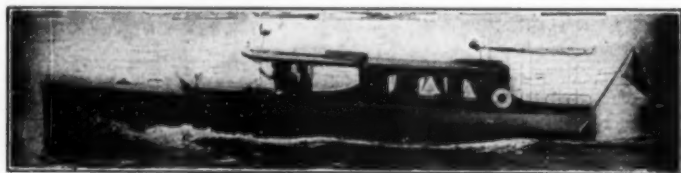
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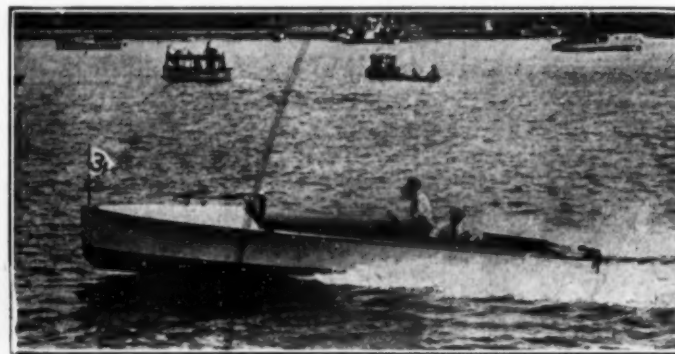
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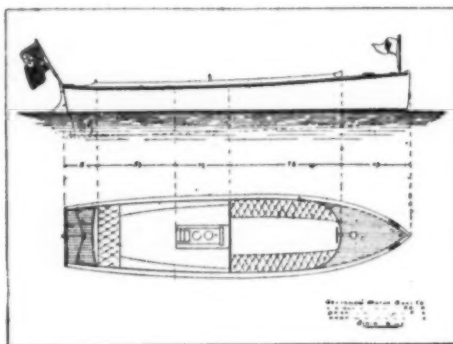
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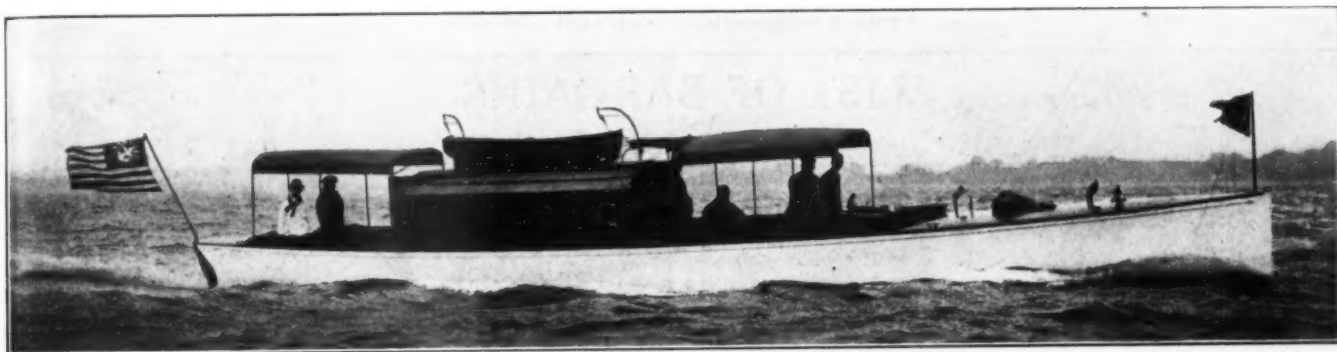
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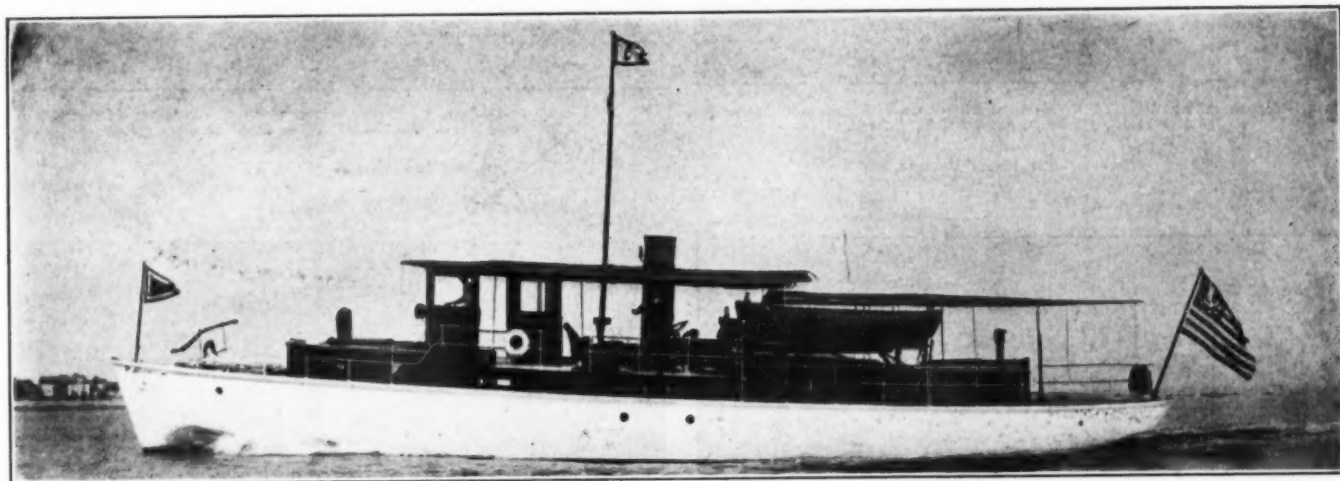
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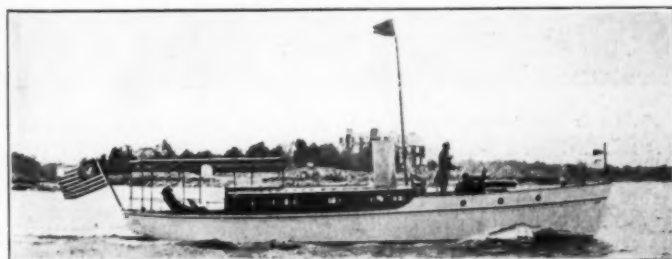
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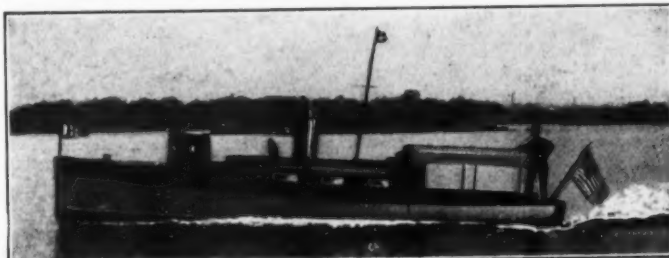
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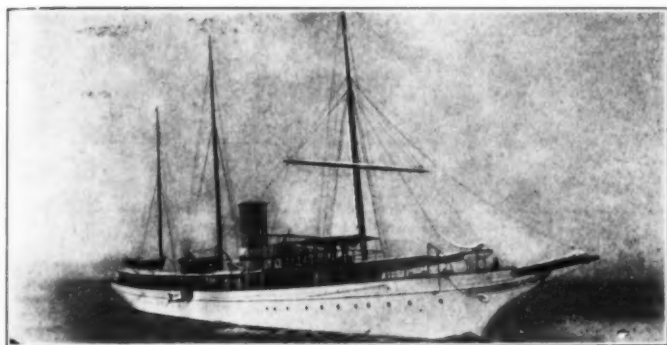
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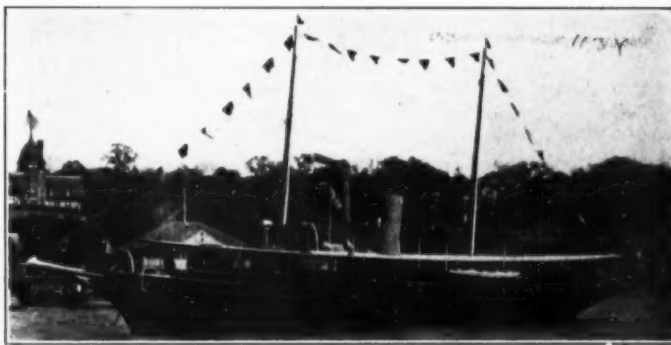
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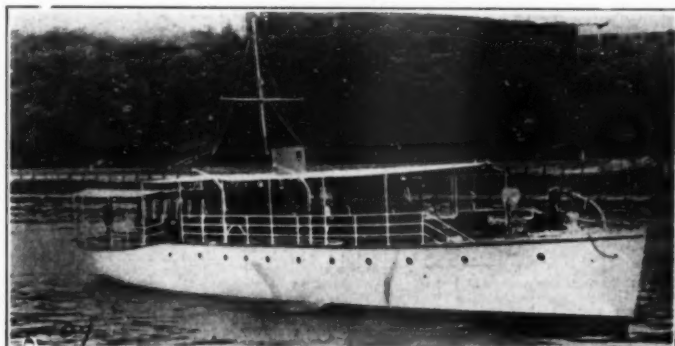
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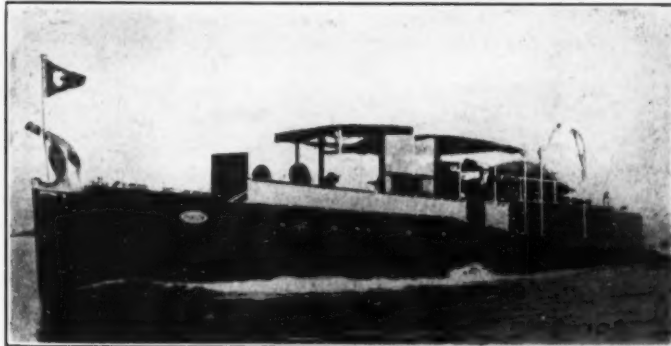
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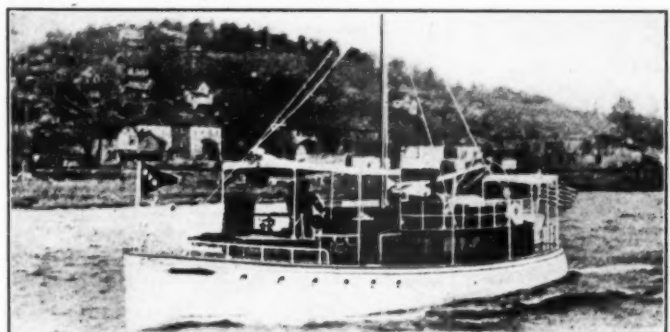
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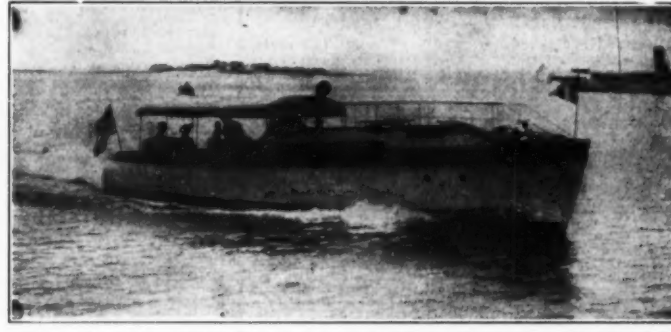
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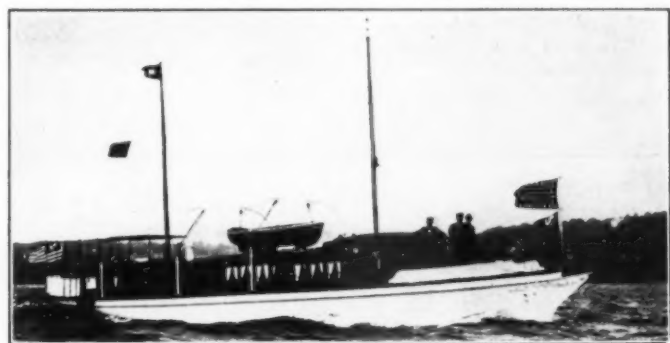
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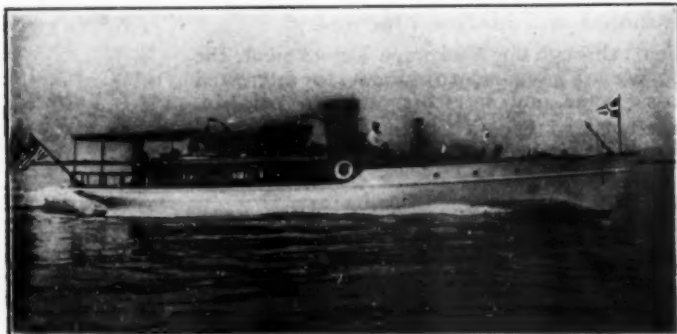
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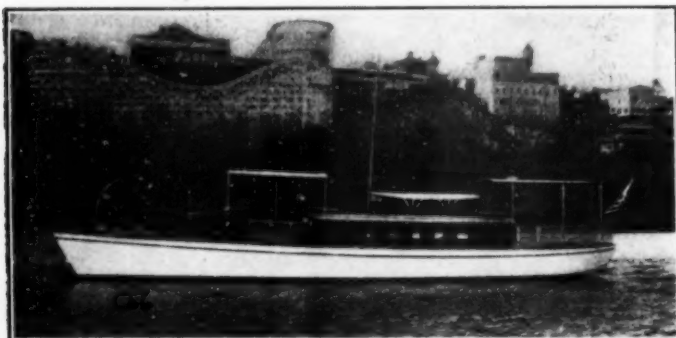
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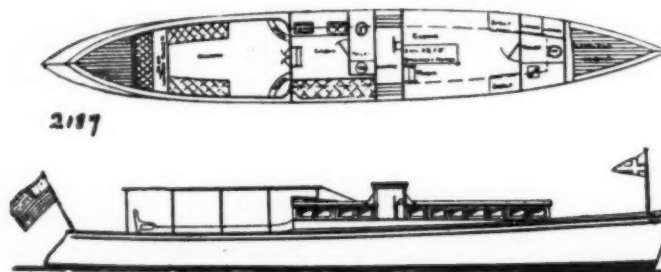
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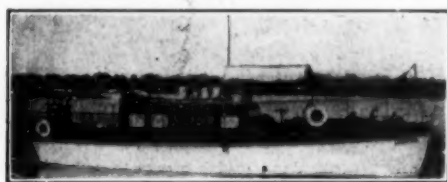
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consists in placing your selling message before the greatest number of possible buyers. MoToR BoatinG has the largest guaranteed circulation in the marine field, reaching boat owners exclusively and of a class who can afford to buy what you want to sell.

CYLINDERS REBORED.—Pistons and rings fitted, new cracks, connecting rods, cases, transmissions, any part for automobile or motor boat motor reproduced like original. The shop of quality. McCadden Machine Works, Minneapolis, Minn.

WANTED.—A Matthews launch hull, between 30 and 32 ft. length, 6½ or 7½ ft. beam. Must be A1 condition, with or without equipment. Address Wm. M. Pagel, 295 Chestnut St., Detroit, Mich.

BUSINESS OPPORTUNITY: Have high-class motor-boat mail-order proposition. A clean, legitimate business and unlimited field. Would like to interest partner with capital to exploit same. Address P. O. Box No. 359, Syracuse, N. Y.

WANTED.—September, 1912, number of MOTOR BOATING. Address, Fred W. Yetter, 517 McCabe Ave., Wilmington, Del.

HIGH GRADE 4 or 6-cylinder automobile, value \$3,500. I wish to exchange same for 6-cylinder cruiser of 40 to 60 ft. P. O. BOX 819, Providence, R. I.

WANTED.—4-cylinder, 4-cycle, 30-40 h.p. marine engine; no shaft or wheel. Describe in detail. H. C. KENNINGTON, So. Casco, Maine.

FOR SALE.—Auxiliary Yawl ALGA, 42 ft. 9 in. OA, 12 ft. 6 in. beam, 3 ft. draft, 11 h.p. engine. Particulars on application. F. F. Farrell, New Orleans.

WANTED.—Low-priced, 50-passenger gasoline motor boat for use in short excursion trips on small inland lake. Not over 3-foot draft. J. B. F. STONER, 19 W. Main St., Chattanooga, Tenn.

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Every motor boatman, every yacht owner, sooner or later, has something to sell—something for which he has no further use—a boat, an engine, some equipment or other marine article that is just as good for service as ever. The fact that he no longer needs it does not diminish its value to the man who has a use for something of the kind.

There is a good customer looking for every article which is in serviceable condition. The question is to find that customer. That is what Motor Boating's Market Place is for. Send us an advertisement of your discarded articles today.

J. S. HILDRETH, Adv. Mgr., Motor Boating

119 West 40th Street, New York

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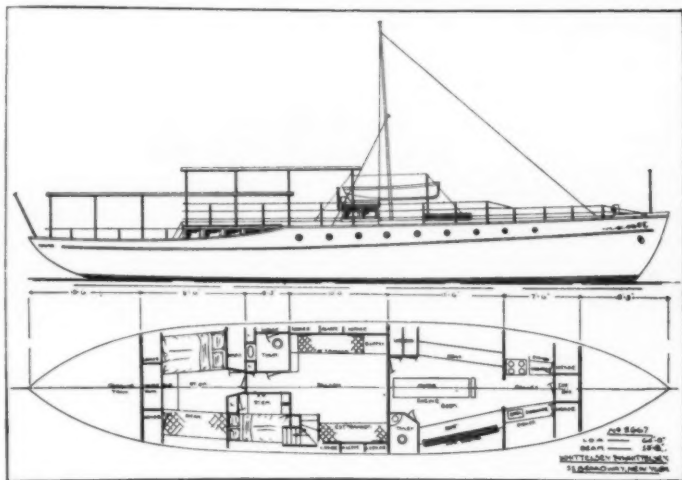
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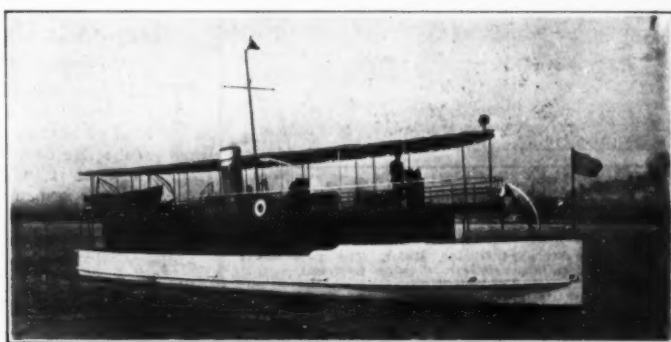
Opportunities

for the
Motor Boatman

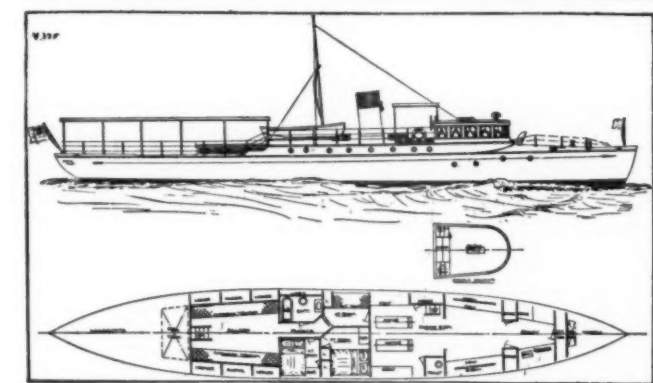
Before you buy or before you sell examine the exceptional buying and selling opportunities under this heading. They comprise the best offers of the month. Please mention MoToR BoatinG.



No. 2667—For Sale—High-class, 65-foot motor yacht; designed by us; Standard motor; two staterooms; electric light; price reasonable. Whittelsey & Whittelsey, 11 Broadway, New York City.



FOR SALE, CHARTER.—Very reasonable; steel, twin screw, 80 x 14 x 3.6 ft.; two 60 H. P. Craig engines. Four staterooms, electric lights, etc. Deck houses solid mahogany. Gasoline capacity, 1,500 gallons; fresh water, 400 gallons. Yacht now on west coast Florida. Address, Owner, 1414 Fisher Building, Chicago.



No. 2813.—For sale, exceptional bargain; 90-foot motor yacht; designed by us; twin screw; Sterling motors. Whittelsey & Whittelsey, 11 Broadway, New York City.



No. 2816.—For Charter or Sale, now in commission in Florida; light draft; 75' twin screw motor cruiser; splendid accommodations; by month or shorter term. Whittelsey & Whittelsey, 11 Broadway, New York City.

TWENTIETH Century motor for sale; 50-65 H. P., 4-cylinder, full equipment, used three months, price \$1,650. More power required, reason for selling. Whittelsey & Whittelsey, 11 Broadway, New York City. Phone Rector 4718.

A BARGAIN—6-cylinder Speedway engine, 50-60-h.p., all latest improvements, Bosch magneto, Kingston carburetor, copper tank, bronze shaft. Room 803, 74 Broadway, New York City.

CANADIANS, Second-hand engine bargains. Send for list. Guarantee Motor Company, 73 Bay Street, North, Hamilton, Ont., Canada.

USE "SNAPPER" ENGINES for your small boat. They are a big little engine built by The Automatic Machine Co., Bridgeport, Conn.

FOR SALE.—21-ft. launch, 6 h. p. 2-cyl. Gray motor; speed 12 miles. Automobile top and cushions. Write for price and description. Milton J. Gold, 722 8th St., Brookings, S. D.

\$12 covers cost repairing cylinders scored by loose wrist pin. Bore not enlarged—no new pistons required. Broken cylinders and crankcases expertly welded. Work fully guaranteed. Prompt delivery assured. References and complete information cheerfully supplied. **WATERBURY WELDING CO.**, Waterbury, Conn.

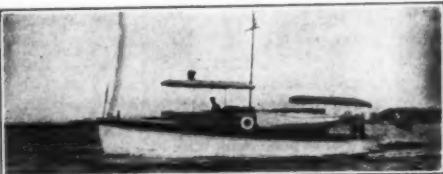
THE Utica Motor Boat Club would like to purchase a House Boat suitable for a club of 50 members. Address **GEO. J. PLOPPER**, Sec. and Treas., 31 Faass Avenue, Utica, N. Y.

WANTED—Back numbers of **MOTOR BOATING**. Address **S. T. Atkins**, 108 South LaSalle St., Chicago.

FOR SALE.
HOUSE BOAT. On 18 x 60 scow. For family, artist, or sea shore business. 939 8th Avenue, Room 302.



17 ft. stepless Hydroplane, 25 to 27 mile speed; 25 H.P. three cylinder Pierce Budd engine, Bosch magneto; hull best oak and cypress construction, mahogany decks and finish; self aligning bronze strut and bearings; brass screw fastened throughout; used only half dozen times price \$700 cash. Can be seen at Evanston Yacht Club Chicago. Address Stewart, 16 Balmoral Place, Winnipeg Canada.



Bridge deck cruiser, 37 ft. 5 in. by 9 ft. 1 in.; 24 H. P. Lamb motor. Boat less than two years old, and cost new over \$4,000. For quick sale will sacrifice for \$2,000. For particulars address Sacrifice, care of Motor Boating.

FIVE AND ONE-HALF kilowatt Diehl dynamo, direct-connected to 2-cylinder, 10 h.p. Lackawanna motor, capable of delivering 90 to 100, 16 candlepower lamps. Complete, ready to run. Price, for quick acceptance, \$250. This is a 1910 outfit, but was used only one season and is practically as good as new. Further particulars, **BRUNS, KIMBALL CO.**, 132 Liberty Street, New York City.

FOR SALE.—Hydroplane **A. F. B.** built by Adolph Apel, Ventnor, N. J.; 49 h.p., 4-cylinder Van Blerck engine. Winner of South Jersey championship. Most consistent and successful hydroplane of 1913 racing season. Finished and won more races than any other hydroplane in her class in this section. With one exception winner of first prize in every race. Will be sold at half original cost. Reason for selling, having larger boat built. Can be seen at **LOUIS BURK**, Girard Avenue and Third Street, Philadelphia.

YACHT DESIGNS: My Album of Yacht Designs is the finest book of the kind published. Contains a large number of fine motor boats, sailing yachts, canoes, rowboats, ice yachts, cruisers, etc. Finely illustrated with line cuts and engravings. Over fifty modern, up-to-date designs. Mailed for fifty cents. **B. J. Henley**, Syracuse, N. Y.

WILL trade latest style standard make automobile, like new, guaranteed, value \$3,500, for raised deck cruiser, 40 to 60 feet, 4 to 6-cylinder motor; must be a first-class boat. **F. A. GANTNER**, Box 819, Providence, R. I.

FOR SALE.—New 2 h.p. Waterman canoe engine. All boat equipment. Engine never unpacked. Cost \$60. First reasonable offer. **F. A. TRYON**, 1110 Niagara Avenue, Niagara Falls, N. Y.

EXCEPTIONAL OPPORTUNITY.—Oak stem rabbit-ted, for 23-foot V-bottom runabout, \$12. Plans, instructions, full size drawings, lumber list, thrown in. Building larger boat. **WALTER SHINER**, Box 672, New Haven, Conn.

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BUILDERS,
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Acetylene Co. (Safety Storage System.)
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A NEW ENGINE FOR YOUR PRESENT ONE

SEWEN, KIMBALL & COMPANY, INC., 125 Liberty Street,
New York City, will make you a most liberal allowance on
your present engine in exchange for a new one. Let us
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OVER 2,500 YACHTS AND LAUNCHES FOR SALE.

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Designing and
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Designers and Builders of
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CONSTRUCTION
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FREDERIC S. NOCK
NAVAL ARCHITECT AND YACHT BUILDER

MARINE RAILWAYS, STORAGE, REPAIRS
EAST GREENWICH RHODE ISLAND

THE PRIZE CONTEST.

(Continued from page 93)

Selecting a New Design.

Answers to Third Question, October
Issue.

Depends Upon the Type.

(Prize-Winning Answer.)

THE first thing to be decided in selecting the design for a new boat is the type or kind of boat that will supply the needs of the prospective owner.

If the boat is to be used mostly for short day trips on somewhat protected waters, the open runabout type, with enclosed motor and capable of considerable speed, will be satisfactory. But if the boat is desired for cruising, hunting, etc., then a small or medium-sized raised-deck cruiser should be selected. The size depends very much on the amount to be expended, first on the boat and later on operating.

If extreme speed, racing or joyriding is necessary to make the owner happy, then the hydroplane will supply the need.

Having decided the size and type, the next thing to be considered is the lines, beam, freeboard, etc. As there has been considerable improvement in the designs of all types in the last few years, a comparison of the newer designs with the older ones would show where the designs were improved, and the points to be considered in selecting a new one.

In the open boat or runabout there is a tendency toward more beam and depth and fuller deck lines. This makes the boats more powerful and seaworthy. It also provides more room and comfort.

The plumb stem is used on most of the new designs. The reason is that with the higher freeboard and full deck lines, there is no need to rake the stem. Also a high bow and raking stem do not look well.

The deck lines forward are much fuller than in the older boats. This provides a flaring bow with great buoyancy, which prevents diving when driven into a head sea.

Some form of the V stern, round stern, or square transom are generally used. For all ordinary cruising and general purposes the broad flat stern, if not made too wide and heavy, has proven best. Of course, the whale boat or compromise stern is desirable for ocean cruising or where great seaworthiness is required and speed is of less importance.

There is a tendency to make the stern of cruisers narrower and not so heavy at the waterline. This allows an easier motion in a sea.

The whale boat, or sharp stern, is less desirable for a small boat than larger ones, because the small boat usually has proportionally greater power and will squat more than the large one. The small boat is also affected more by the load, when it is usually in the cockpit at the stern when under way. A hard bilge is desirable in a small boat, as it provides great stability, which makes it easier to move about in the boats. In the larger boats an easy bilge will make the boat more comfortable in rough water.

Of course, it is necessary to provide the proper amount of displacement so the boat will float at the designed waterline with crew on board. Also, the center of buoyancy should be located so the boat will trim properly. This should be worked out by the designer.

If the displacement and center of buoyancy are known, then a comparison with other designs of similar size and construction will show even an amateur what may be expected of the new design.

There are many other points which the more experienced boatman would wish to consider, but these remarks are intended for the newcomer, and it is hoped will be of assistance in selecting the design for a new boat.

C. H. CHRISTIE, Saginaw, Mich.

(Prize Contest Continued on page 152)

NAVAL ARCHITECTS & YACHT BROKERS



"Piute III." Type "Hand-V-Bottom" 24-
Footer for Rough Water Use. Speed 20
miles. H. P. 30.

I SUPPLY complete Hand-V-Bottom
boats of the highest grade. They are
built, engined and tested under my per-
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Write for Quotations

Amateurs have built hundreds of suc-
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is "Old Glory II." You can build one if
you work from genuine plans.

Send stamp for 1914 illustrated catalog
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Naval Architect

NEW BEDFORD, MASS.

U. S. A.

T. S. POEKEL & CO.

Engineers and Designers
YACHT BUILDERS

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It costs you only 3c per word

LAWRENCE M. THOMPSON

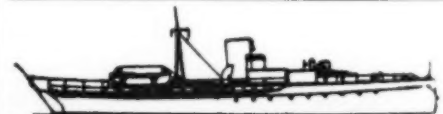
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Specialist in the Design of Motor Cruisers,
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Sketches and quotations for designs submitted on recom-
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with a perfect finish—use



Valspar is the most durable varnish made, and is particularly valuable for use on boats because water cannot weaken it or turn it white.

To-day Valspar-varnished craft are sailing all waters. Their decks are baked in the tropics, ice-coated in the north, lashed

alike by the salt seas of the Indian Ocean and fresh seas of the Great Lakes.

Yachtsmen sometimes tell us of Valsparred cockpits that have held water for months at a time without damage. We offer \$1000 if Valspar ever turns white in water.

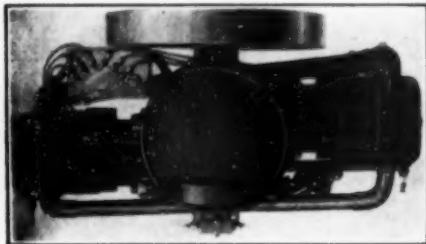
Write for nearest dealer's name, instructive book on how to varnish boats, and free two-ounce sample can.

VALENTINE & COMPANY, 456 Fourth Avenue, New York City

Largest manufacturers of high-grade vehicle varnish in the world

NEW YORK CHICAGO BOSTON (Established 1832) TORONTO PARIS AMSTERDAM

Dice Engines are no Gamble



Two-Cylinder Horizontal Opposed
Dice engines can be installed under a seat or locker or under cockpit floor, thus increasing carrying capacity. All parts accessible from top, notice crank case cover which is quickly removed and gives large opening into crank case. Four sizes. Ask for catalog "M.B."

DICE ENGINE CO.
1560 Jackson St., Anderson, Ind.

LOW-PRICED FUEL WITH THE
LEARY TWIN PORT MOTOR

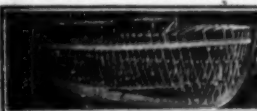


This motor is of the three-port, two-cycle type, and having two intake ports (patented), one on each side, and a carburetor on each side, has a perfect control and high power. Where a cheaper fuel than all gasoline is desired, the double supply ports permit of one carburetor being piped with gasoline (on this motor is started), and the second with kerosene. This mixture (1/2 gasoline—1/2 kerosene), generates a powerful, satisfactory and cheap fuel. The Motor, with 18 years' successful designing behind it.

LEARY GASOLINE ENGINE CO.

1888 Dewey Avenue Rochester, N. Y., U. S. A.

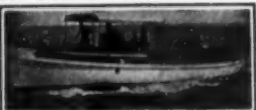
Build Your Own Boat



The Frame We Ship You

SEND FOR OUR CATALOG

which tells you all about it. You can build a 20 ft. launch for \$20 from patterns, that you could not buy at any factory for less than \$120, or you can buy the complete frame and build this 20 ft. cruiser shown in the picture for less money than you would have to pay for the cheapest 20 ft. finished cruiser you could buy.



The Boat You Build

BEFORE BOAT & MOTOR WORKS, 3218 State St., Bay City, Mich.

GALUSHA
GAS
PRODUCERS

Use gas made from coal, coke or charcoal in your engine. It is as cheap as gasoline at two cents a gallon. 1/4 to 1/12 the expense of power from steam or oil. We build class from 18 H. P. up.

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1 to 6 Cylinders 5 to 65 H.P.
Manufactured by
GEO. A. LISK
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30'-6" x 8' V Stern

RICHARDSON
Anything in the best line R.D. or Complete Write for Estimates on your requirements.
G. R. Richardson
HUNTER ST.,
St. YONAWARD
St. Y.

The Prize Contest

(Continued from page 150)

The Ideal Cruiser.

UNQUESTIONABLY the most successful pleasure craft are those which are best adapted to the needs of their particular owner and designed to suit the waters upon which they are to be used. However, since the raised-deck cruiser of moderate size is at present a very popular type, both upon the Great Lakes and the seacoast, we will assume that it is such a craft which our imaginary owner has in mind.

The first requirement in any boat should be safety. To assure one's self of this most important requisite, the form of the hull must be such as to insure easy motion in a seaway to prevent racking or straining of the frame or planking. To this end, the formation of the bow and stern should be somewhere near symmetrical, and good draft and deadrise must be provided to give the necessary displacement and to eliminate pounding. The top sides should be carried up high enough to keep out the water, and no large glass windows should be permitted. All openings should be arranged to close watertight in case of need.

The construction of the hull should be heavy enough to insure durability under adverse conditions. Light construction is desirable only in racing craft. Copper nails riveted over burrs or galvanized boat nails make the best fastenings. Remember that high sides forward, combined with considerable flare above the waterline, tend to make a boat that will be dry when driving through a head sea. A watertight cockpit is a valuable feature, and is usually provided with scuppers, making it self-bailing. Decks are seldom really watertight unless canvassed and kept well painted. Provide substantial mooring bitts forward and towing bitts aft. These should be built for business.

A vitally important factor, bearing upon the safety of boat and crew, is the gasoline storage and the installation of the machinery. The fuel tanks should either be in the open cockpit, or, if below decks, between watertight bulkheads, thus keeping possible leakage away from parts of the vessel, where the vapor might become ignited. Tanks should be so strongly fastened in place that shifting is impossible in the heaviest sea. Annealed copper tubing makes the best supply pipe, and a good strainer should be fitted between tank and carburetor.

Place the motor where it will be absolutely protected from rain or spray and be sure to allow plenty of room all round it so that adjustments or repairs may be made easily. The motor foundation should be built of heavy oak, strongly bolted together, with the bearers carried well forward and aft to distribute vibration. The shaft angle should not exceed eight degrees, and the propeller should be well immersed to give it solid water to work in, and to reduce the tendency to race. At least six inches depth of water over propeller blades should be allowed when boat is at rest. Provide power enough to permit of a 25 per cent. reserve when running at cruising speed. This reduces wear and tear on the motor and makes lubrication easy. Slow speed motors and large propellers are best suited to cruising boats.

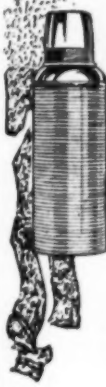
Some sail equipment is desirable if the boat is to cruise off shore, both to enable her to reach port to leeward in the event of an engine breakdown, and to steady her in a beam sea. The mast ought to step on keel, if possible, and should be substantial and well stayed.

Steering gear must be heavy and strong, with large sheaves and everything get-at-able. The tendency is usually to make these parts too small and light.

The owner's comfort now merits some consideration, and liberal headroom in the living spaces is one of the greatest boons to the cruising man. The architect should provide all of this commodity possible without spoiling the boat's proportions. Berths or transoms of adequate length and breadth will likewise be much appreciated. Six and a half feet in length and two and a half feet in width is none too much.

ALLAN O. GOULD, Portland, Me.

The Gift For Every Boat Owner



THERMOS fills an important place in the equipment of every motor boat; just the thing for keeping fluids or solids piping hot or icy cold until wanted.

THERMOS

in the new model is more durable yet less expensive than before. Ask your dealer for new Thermos catalog showing many useful styles, and remember Thermos in making up your Xmas list.

THERMOS-ON-THAMES
at NORWICH, CONN.

Carafes
Quarts
\$3.50

New York

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DAVIS DINKS

First thing the yachtsman thinks of when he needs a tender is a "Davis Dink." Row or power—8 to 14 ft. in stock. Sturdy boats—stand hard service. Conveniently arranged for passengers or supplies. 8 ft. tender weighs 65 lbs.—carries four passengers. Catalog free.

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Washington St. Sandusky, Ohio

PROPELLER CUFF LINKS

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A Miniature Propeller Wheel

Novelty made of Fine Silver Metal
AUGUST BUERMANN MFG. CO.
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212-220 Jelliff Avenue : Newark, N. J.
Send for our prices

"THE YANKEE" SILENT MUFFLER

The only muffler made without back pressure or noise at all speeds of the engine. Water-tight. Made of Galvanized Steel and light in weight. Made in various sizes. Over 300,000 in use. For sale in New York, by Durkee & Co., Chas. E. Miller.



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E. J. Willis Co., John O. Hopkins; Chicago, Geo. B. Carpenter, 60 Wells St.; Canada, Canadian Fairbanks Co., Montreal, Toronto and Vancouver. Write for catalogue. Manufactured only by THE "YANKEE" COMPANY UTICA, N. Y., U. S. A.

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SPECIFICATIONS

Baldrige Gears are of the balanced planetary type with the unbroken main shaft supported by bearings at both ends—this shaft can't sag in the middle and heat or cause friction. Fully enclosed. Oil can't splash out. Bilge water can't get in. Control handle gives forward or reverse movement. The propeller is disconnecting, allowing the engine to run idle.

Baldrige Gears are light and compact yet strong and durable. They have fewer moving parts than any gear. Splash system of lubrication. Capacity always greater than rating indicates. Powerful clutches, expanding fingers and two sets of cams.

In point of service, Baldrige Gears surpass the highest priced gears of other makes, but their price is little more than the ordinary cheap clutch.



*"The Gear
With The
Unbroken
Main Shaft"*

1914 sees this Gear still three years in advance

Baldrige—"The Gear with the Unbroken Main Shaft"—that requires the largest factory of its kind in the world to supply the demand for it, again leads the field in efficient construction.

Leading engine builders the world over pay tribute to this gear. Foreign builders prefer it to their home makes—American builders choose it, too. When these master minds concur on the Baldrige Gear to this extent, there is but one answer—100 per cent. efficiency.

Baldrige **Reverse Gear**

We make only gears

They are a business to us—not a by-product. Expert designers and engineers fashion the Baldrige features with the single aim of perfecting it to the highest degree of ability. That they have succeeded well is apparent in the enthusiastic reception of the 1913 Baldrige models. The 1914 type is practically identical with 1913 and yet you will wait two or three years to get all of these superior features in any other gear.

In buying the 1914 model Baldrige you take no chances on new departures in design. Every feature of the gear is of time-tested and proven worth. The Baldrige is made in a range of sizes to successfully meet the requirements of every class of marine work in every quarter of the globe.

Service for Builders and Dealers

Our national advertising during the coming year will make the Baldrige more popular than ever and will create a wide demand among users and prospective users.

We are always glad to consult with prospective builders regarding their equipment and, upon receipt of necessary data, to recommend the proper gear for a given job.

You Need This Book

The Baldrige Booklet is ready with a full description of the Baldrige Gear, giving sizes and prices. A copy of it will show you in detail just why and where the Baldrige excels. Send for it today.

THE BALDRIDGE GEAR COMPANY

678 W. Grand Boulevard, Detroit, Mich.

Export Office, 47 Broadway, New York, U. S. A.

J. E. Sitterley, Foreign Sales Manager



CURTISS MOTOR-BOAT WATER CLOSET

\$19.00
with seat
only

\$20.00
with seat
and cover

We built this Motor-Boat Water Closet after carefully considering the designs and requirements of small cruising boats and the demand for a low-priced fixture, suitable for above or below waterline use. When installed above the waterline it only requires a sea-valve on suction pipe. Its simplicity and ease of installation enable anyone to install it.

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Co., Portland, Ore. Marine Engine & Supply Co., Los Angeles,

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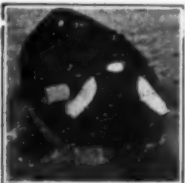
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"The TENDER for TOUGH service." HEADQUARTERS for POWER & ROWING TENDERS. Open boats & CRUISERS all sizes. Engines & ACCESSORIES. Wisconsin Row Boat Motors.

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WATKINS' SPECIAL MOTORS

3 H.P. Single Cylinder - 80 lbs.

6 H.P. Double Cylinder - 90 lbs.

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A strictly HIGH GRADE Motor that

will give CONSTANT and EFFICIENT

service. Especially adapted for OA-

NOES and LIGHT BOATS. Aluminum

base, copper water-jackets, steel

shaft, bronze bearings.

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524 Baymiller St. Cincinnati, Ohio

NEW DEPARTURE BALL BEARINGS

are particularly adapted for motor boat work throughout the power plant. Made in three types. Double Row, combined radial and thrust. Single Row, for radial loads only. Radial, for radial and one direction thrust loads.

Write today for 1913 catalogue.

New Departure Mfg. Co., Bristol, Conn.

Western Branch, 1016-17 Ford Building, Detroit

Medium Duty—Four-Cycle.

(Continued from page 72)

Four Cylinders.

RATED H. P.	MAKE	BORE AND STROKE	R.P.M.	WT.
10	Gilmore	3 3/4 x 5 1/2	750	225
12	Buffalo	3 1/2 x 5	600	490*
12	Doman	4 x 5	600	824*
12	Kermath	3 1/2 x 4	800	370*
12	Murray & Tregurtha	4 1/2 x 5	550	900*
12	Niagara	3 1/2 x 4 1/2	...	550*
12	Regal	4 x 4 1/2	650	650*
15	Aristox	4 x 5	600	500*
16	Frishie	4 x 4 1/2	600	620*
16	Portage	4 1/2 x 4 1/2	600	650*
16	Regal	4 1/2 x 4 1/2	650	900*
16	Vulcan	4 1/2 x 5	550	900*
18	Brennan	4 x 5	550	375*
18	Buffalo	4 1/2 x 5	600	740*
18	Hettinger	4 1/2 x 5	800	420*
18	Majestic	4 x 4 1/2	550	625*
18	Missouri	4 1/2 x 5	600	700*
18	Murray & Tregurtha	4 1/2 x 5	800	500*
20	Carl Engine	4 1/2 x 5	700	380*
20	Doman	5 x 6	535	1140*
20	Fadum	4 1/2 x 5	600	...
20	Gilmore	4 1/2 x 5	650	425*
20	Kuhner	4 1/2 x 5	750	700*
20	Lacy	5 x 5	1450	...
20	Perrless	4 x 5	800	400*
20	Ralaco	4 x 6	625	1375*
20	Red Wing	4 1/2 x 5	600	800*
20	Schaefer	5 x 5	525	600*
20	Sparks	4 1/2 x 5	600	700*
20	Sterling	4 1/2 x 5 1/2	600	725*
20	Stork	5 x 6	550	1600*
20	Westman	5 1/2 x 5 1/2	700	...
21	Truscott	4 1/2 x 5	800	835*
24	Loew Victor	4 1/2 x 5 1/2	600	990*
24	Missouri	5 x 6	600	900*
24	Murray & Tregurtha	5 x 6	650	1000*
24	Portage	5 x 5 1/2	575	800*
25	Brennan	4 1/2 x 5	650	450*
25	Harris	5 1/2 x 5 1/2	600	...
25	Harris	6 x 7	600	...
25	Holmes	4 1/2 x 5 1/2	800	850*
25	Ithaca	4 1/2 x 5 1/2	800	550*
25	Niagara	4 1/2 x 5 1/2	...	850*
26	Lisk	4 1/2 x 5	800	550*
28	Carl Engine	5 x 6	800	700*
28	Mercury	5 1/2 x 5	650	1100*
28	Red Wing	5 x 6	600	1000*
28	Westman	5 1/2 x 5 1/2	650	...
30	Aristox	4 x 4 1/2	600	1000*
30	Brennan	5 x 5	650	550*
30	Buffalo	4 1/2 x 4	800	550*
30	Dice	5 1/2 x 5	800	800*
30	Doman	6 x 6	535	1537*
30	Fadum	5 1/2 x 6	600	...
30	Kuhner	5 x 6	700	800*
30	Monarch	5 x 6	725	1550*
30	Nichols Oil	6 x 6	600	1650*
30	Schaefer	5 x 5 1/2	525	900*
30	Sterling	5 1/2 x 6	600	1140*
30	Van Blerck	5 x 6	600	1150*
32	Hall	5 1/2 x 6 1/2	600	1800*
32	Westman	5 1/2 x 6 1/2	650	...
35	Truscott	5 1/2 x 6	750	900*
35	Red Wing	6 x 6 1/2	600	1300*
40	Armstrong	6 x 6 1/2	550	1400*
40	Carl Engine	6 x 8	600	700*
40	Frishie	6 x 6	600	1000*
40	Mercury	6 1/2 x 6 1/2	650	1500*
40	Missouri	6 x 8	600	2400*
40	Monarch	6 x 7	725	1650*
40	Murray & Tregurtha	6 x 6	800	900*
40	Nichols Oil	7 x 6	550	1800*
40	Strang	6 1/2 x 7	650	2500*
45	Aristox	5 x 5	600	1300*
45	Niagara	6 1/2 x 6 1/2	...	1500*
47	Lisk	6 x 7	600	800*
48	Speedway	6 x 6	800	1700*
48	Holmes	5 1/2 x 6	500	2000*
48	Schaefer	5 1/2 x 6	725	770*
50	Westman	6 1/2 x 7	600	...
60	Mercury	6 1/2 x 7	650	1900*
62	Speedway	6 1/2 x 8	650	2250*
72	Monarch	8 x 9	525	4300*
72	Truscott	7 x 8	700	2500*
75	Campbell	6 1/2 x 6 1/2	800	1000*
75	Craig	6 1/2 x 7 1/2	800	1500*
80	Trebert Reliance	6 1/2 x 8	750	2500*
85	Loew Victor	7 1/2 x 8 1/2	600	2300*

Six Cylinders.

RATED H. P.	MAKE	BORE AND STROKE	R.P.M.	WT.
30	Doman	5 x 6	535	1500*
30	Gilmore	4 1/2 x 5	650	625*
30	Stork	5 x 6	550	2100*
36	Loew Victor	4 1/2 x 5 1/2	600	1325*
36	Missouri	5 x 6	600	1650*
38	Lisk	4 1/2 x 5	800	700*
40	Brennan	4 1/2 x 5	800	650*
40	Holmes	4 1/2 x 6 1/2	800	1250*
40	Schaefer	5 x 5	625	900*
40	Van Blerck	5 x 6	600	1458*
45	Doman	6 x 6	535	1835*
45	Majestic	5 1/2 x 6	600	900*
45	Monarch	5 x 6	725	2100*
45	Sterling	5 1/2 x 6	600	1450*
50	Buffalo	4 1/2 x 5	800	775*
50	Frishie	4 1/2 x 5	800	875*
50	Holmes	5 1/2 x 6 1/2	800	2400*
50	Kuhner	5 x 6	800	1100*
60	Mercury	6 1/2 x 6 1/2	650	1800*
60	Monarch	6 x 7	725	2350*
60	Niagara	6 1/2 x 6 1/2	...	1900*
60	Standard	6 x 6 1/2	700	1500*
70	Lisk	6 x 7	600	1000*
75	Frishie	6 x 6	800	1400*
75	Holmes	6 x 8	500	3000*
75	Westman	6 1/2 x 7	600	...
80	Speedway	6 x 6	800	2300*
100	Campbell	6 1/2 x 6 1/2	800	1300*
100	Speedway	6 1/2 x 8	650	3100*
108	Monarch	8 x 9	525	5800*
110	Craig	6 1/2 x 7 1/2	800	2000*
130	Loew Victor	8 1/2 x 8 1/2	600	3000*
160	Speedway	8 1/2 x 10	550	5900*

Eight Cylinders.

RATED H. P.	MAKE	BORE AND STROKE	R.P.M.	WT.
50	Gilmore	4 1/2 x 5	650	850*



"A High Grade Outfit for the Discriminating Buyer"

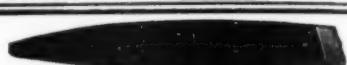
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POPE MOTOR CAR CO.

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MORRIS CANVAS MOTOR HULLS

The most serviceable light hull in use. 14 miles per hour, for \$350.00. High grade construction and equipment. Length 30 ft.

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STARTING and LIGHTING SYSTEM

Eliminates Hand Cranking—Press Button and Your Motor Starts.

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For Gasoline, Air for Whistles, Oil, Water,

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and plate steel work of any shape desired.

Galvanizing of all kinds of boat work.

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Kerosene Oil Engines

Marine, Stationary, Portable

NO DANGER. Maximum

Power, Lightest Weight.

Simple, Reliable, Economical.

No batteries. Self-ignition by

Compression. Fully guaranteed.

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No charge for packing

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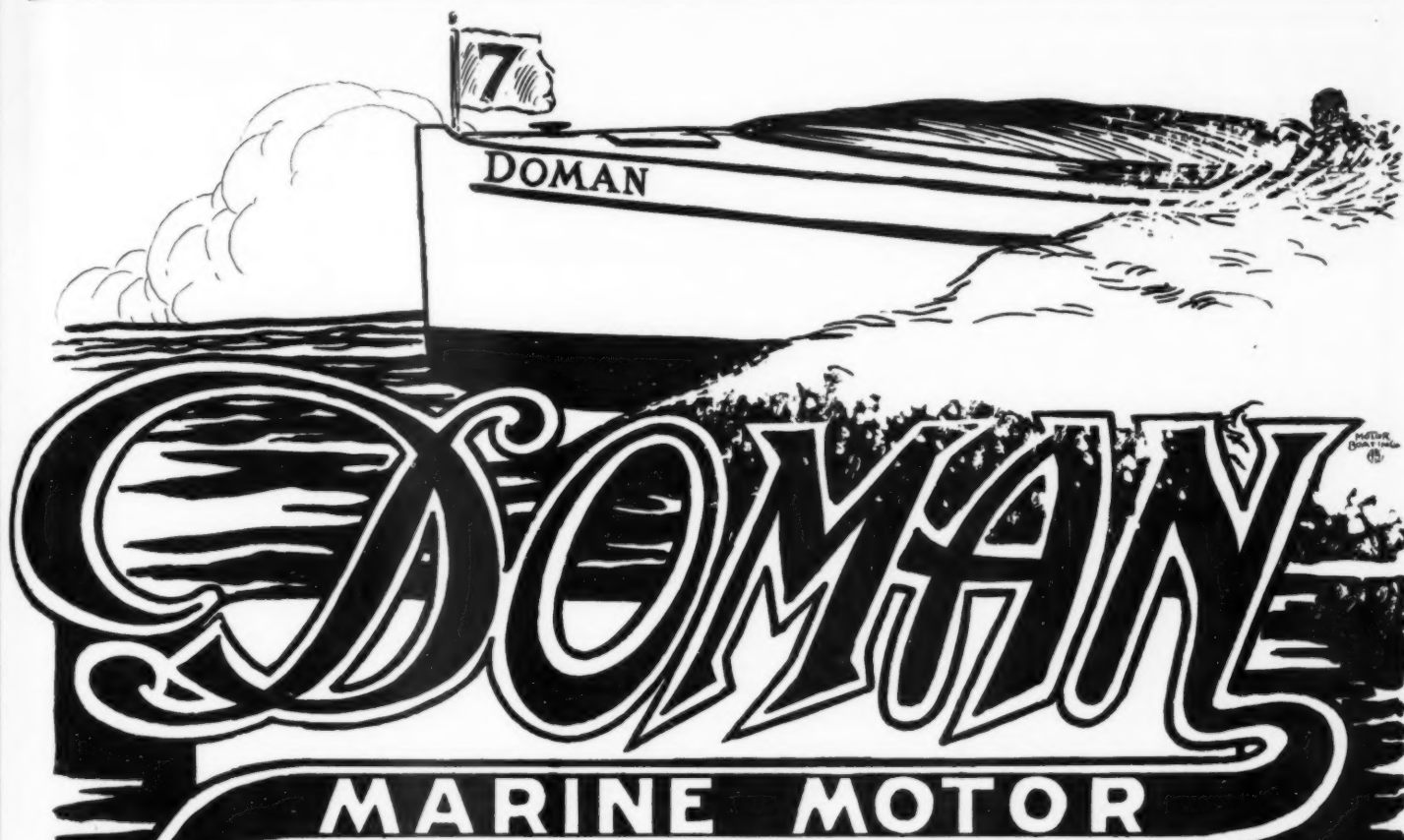
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RICE 20-FOOT SPECIAL LAUNCH

\$275.

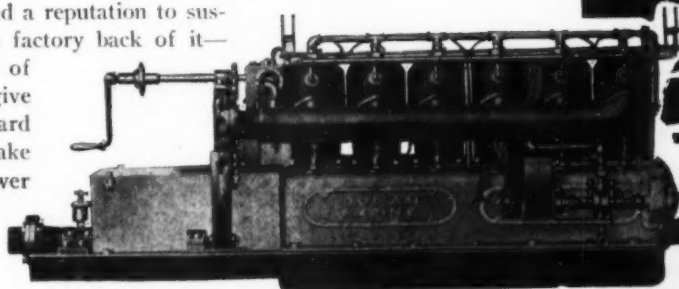


A \$400. Boat For \$275. If you are going to



High Speed—Heavy Duty—Medium Duty

The Doman is a motor with a name and a reputation to sustain—a motor with a reliable, responsible factory back of it—a motor that has made good in all sorts of service, and that can be relied upon to give complete satisfaction throughout years of hard service. These recognized facts are what make the Doman a safe buy for every man—a power investment without risk, because experience has shown that all possibility of dissatisfaction has been eliminated.



Honest service value is built into the Doman at the factory. From the designer's desk to the shipping platform every detail of manufacture is handled so carefully that reliable service is assured. The tests of each individual motor are made as thoroughly as though it were a special job. No precaution of up-to-date manufacturing efficiency is neglected. And with all this, the Doman isn't a high priced motor. It has all the advantages of the high priced without the prohibitive cost.

Doman High Speed Motors have the true Doman stamina and reliability, with the lightness and strength essential for engines of this type. Four- and six-cylinder models from 25 to 75 H. P. All Doman Motors are of the four-cycle type, reliable, durable, accessible and economical.

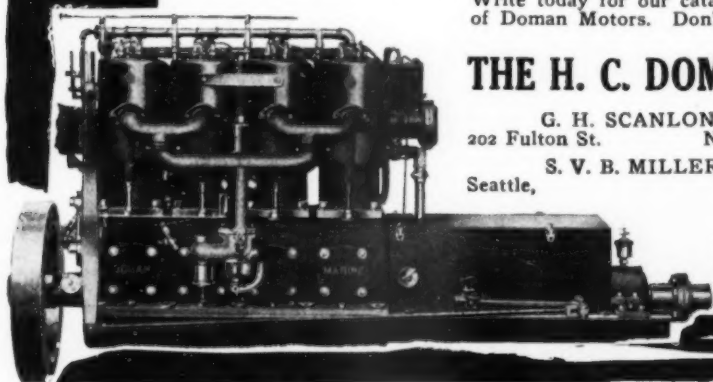
Doman Heavy Duty Motors embody the qualities which have built up the Doman reputation. They are powerful, sturdy, with ample allowances of strength, and designed to last in the heaviest service without delay or annoyances of any kind. Doman Motors are always rated at moderate speed, so the owner is assured of an abundance of power for all occasions, without the necessity of crowding his engine. Heavy Duty models are built from 16 to 60 H. P., two to six cylinders. A Paragon Reverse Gear is built onto the base extension. Bosch Magneto, Detroit Oiler and Schebler Carburetor, regular equipment. Medium Duty Models, 6 to 45 H. P.

Write today for our catalog giving complete information on the full line of Doman Motors. Don't buy any engine until you have read this book.

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H. CHADWICK CO.
People's Gas Bldg. Chicago, Ill.
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JEFFERY'S MARINE GLUE

The Purpose For Which the Various Grades Are Intended

For Deck and Hull Seams of Yachts and Motor Boats,

—USE—

No. 1. Extra Quality

Black, white, yellow or mahogany color. Give black the preference; it is more elastic and satisfactory in every way.

Specified by all first-class designers, and used exclusively by all the prominent builders.

FOR SHIP'S DECKS USE

No. 2. First Quality Ship Glue

No. 3. Special Navy Glue

For Waterproofing Canvas, for Covering Decks, Tops of Cabins, Canvas Boats, Canoes and Flying Boats

—USE—

No. 7. Soft Quality

Black, white or yellow. It not only water-proofs and preserves the canvas, but attaches it to the wood, and with a coat of paint once a year will last as long as the boat.

Waterproof Liquid Glue

Is Used for the Same Purposes as No. 7 Soft Quality

Also in Combination with Calico Between Double Planking of Diagonally Built Boats

It is ready for use, requires no heating; simply open the can and paint it on, like ready-mixed paint.

This glue will also attach cork, felt, rubber, leather and linoleum to iron, steel or wood.

Special Marine Canoe Glue

Best Filler for Canvas

Black, white and yellow

Our 25c. emergency cans made a big hit. Every canoeist should carry one; it is as valuable to him as a repair kit to a bicyclist or automobilist. Does not dry up nor deteriorate in the can, but will be found equally as ready for use in ten years as today.

It is a Johnnie-on-the-spot article that no boatman should be without. Sent by mail on receipt of 30 cents in stamps.

All put up in 1, 2, 3 and 5-lb. cans; also in 14, 28, 56, 112-lb. boxes, either tin or wood

Insist on Having the RIGHT Kind if You Hope to Obtain Satisfactory Results

The largest dealer in your town carries this in stock, if not, he should. Tell him to write us for the agency.

AGENTS WANTED EVERYWHERE
For Sale by All Yacht, Boat and Canoe Supply Houses and Sporting Goods Dealers. Send for Samples, Specimens, Circulars, Directions for Use, Etc.

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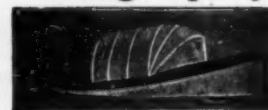
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If you have anything to sell to motor boat owners, dealers or manufacturers, you can sell it most easily by advertising in Motor Boating.

Sliding Spray Hoods



Frames of brass or best quality ash, complete with all necessary fittings; cloth covering, light, durable, absolutely water proof; can be raised or lowered in 10 seconds; furls compactly.

Life Saving Devices

of all kinds; Acme Fibre Cushions, Perfection Pneumatic Mattresses, Folding Canvas Boats, Life Preservers, Swimming Collars, etc. Our Special Catalogue M, fully describing these and other sporting accessories, should be in your hands. Send for it today.

THE PNEUMATIC MFG. CO.

524 17th Street

Brooklyn, N. Y.

The Motor Yacht

(Continued from page 9)

of Tams, Lemoine and Crane. She also is of steel, twin screw, 128 feet 9 inches long, 19 feet 4 inches breadth, with two six-cylinder Speedway motors, 11 x 14 inches. Another large twin-screw steel yacht is the Asor II, designed by William Gardner and built by Wood for Mr. Mulford Martin; 120 feet long; 12 feet 9 inches breadth and 4 feet 2 inches draft; with two six-cylinder Craig motors, 11 x 12 inches. One of the first motor yachts of over 100 feet length is the Monaloe, designed by Arthur Binney and built by Lawley & Son in 1908 for Mr. Chauncey B. Borland; a wooden hull, originally single, but altered to twin-screw; 129 feet 8 inches in length, 13 feet 9 inches in breadth, and 7 feet 8 inches draft; she has now two six-cylinder Speedway engines, 11 x 12 inches. The Alcala, originally Heather, is also of wood, twin-screw, designed by Morgan Barney and built by J. M. Bayles & Sons; now owned by Mr. James D. Lacey. She is 105 feet in length, 15 feet 5 inches breadth and draws 4 feet 9 inches; her motors being six-cylinder Standards, 12 x 14 inches. The Esperanza, formerly Cristina, is a steel boat with twin screws, designed by Gielow & Orr, and built by Lawley, now owned by J. Dalzell McKee. She is 110 feet over all, 17 feet 6 inches breadth and 6 feet draft, with two six-cylinder Standard motors, 8½ x 11 inches. 110 x 18-foot Aeldgytha, powered with two 150-200 h.p. Craig Diesel engines, of the 4-cycle type. This boat was designed by Morris Whitaker, of Nyack, N. Y., and built by The Matthews Boat Company, for F. A. Hardy, of Chicago, and is of the raised deck type. This type of boat has been built for some years in the East for service on the coast. The Aeldgytha, however, is the first of this general type to be built on the Great Lakes, and one of the first boats for pleasure purposes to have Diesel machinery, the outcome of which is looked forward to by the general public. These fine vessels are merely examples taken from a large fleet distributed over the Atlantic and Pacific seaboard, the Great Lakes, and inland and Southern waters; the oldest of them is barely five years old, while all of them must be classed as yet as experimental. The marine gasoline motor is being further perfected every day. Its adaptation to such other fuels as kerosene, heavy oils and distillate, and producer-gas is even less advanced than the gasoline equipment, while finality in motor design is still far distant, and the ablest of the yacht designers have not as yet realized the full possibilities of the type in the matter of hull design. All things considered, it is not too much to expect that another five years will show as much improvement in this class as the past five has in the medium size of motor cruisers.

The steam yacht was essentially a salt-water product, omitting the work of the more noted of the designers and builders of the Atlantic coast, even the average Eastern steam yacht was in every detail of design and construction superior to those of the Western lakes and rivers. This, however, is very far from being the case with the motor yacht; there has been a demand from Western owners for thoroughly modern yachts and this has been ably met by Western designers and builders, some of the finest of the fleet, in both hulls and engines, hailing from the Great Lakes. Among others being the Nymph, a modern and up-to-date cruiser, 75 feet in length, 14½ beam, and powered with a single 6-cylinder 6½ x 9-inch Sterling engine. The Clarinda, a fine and able cruiser of the flush deck type, 98 feet in length with 17½-foot beam, and powered with two 6-cylinder 150 h.p. Craig motors, which has proved in service to be one of the best of the types now in use. The Niagara, owned by Com. Kotcher, of Detroit, is 81 x 14½ feet, and powered with two 6-cylinder 6½ x 9-inch heavy-duty Sterling engines. This boat was greatly admired during the Perry Centennial celebration, being the flagship of the Perry Centennial Power Boat Committee. The 85 x 14½-foot Mahana II, powered with two 4-cylinder heavy-duty Craig engines, and owned by H. A. Parsons, of Cleveland, Ohio, son-in-law of the late Mark Hanna, and is in use on the Northern lakes. This boat has been particularly successful. The Ethel M. Ward, owned by Chas. Willis Ward, of Queens, L. I., N. Y., a well-known cruiser in use on the Northern lakes and in Florida, having made the trip to Florida two or three different times in the interests of Mr. Ward's estate. The Ethel M. Ward is powered with two heavy-duty Murray & Tregurtha engines of the gasoline type and has proved to be an able and seaworthy type of craft. It is the characteristic of motor yachting as distinguished from the old sailing sport that it is national, rather than local, appealing not merely to dwellers by the seaside brought up in close proximity to salt-water commerce and sport, but to men of all pursuits and occupations and in all places.

Exporting of American Motors.

(Continued from page 5)

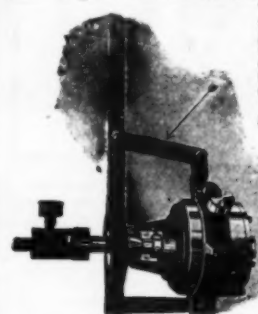
and almost equal in commercial importance to Caracas itself—here motor boats are permitted. Local boating clubs of several different nationalities each boast of one or two "club" motor boats. If the purchase of these boats is sometimes influenced by what, for euphony's sake, we may call "policy," yet I am rather confident that with right approach on the part of a thoroughly competent salesman, an important trade might ultimately be built up. There is not only the pleasure boating which is a sport of the clubs and of some individuals at present, but here again is a chance for the motor freight boat, especially one of very light craft. Then, too, the trade of all Western Venezuela and a goodly share of Eastern Colombia comes down rivers flowing into the Lake of Maracaibo, which are at present navigated by distinctly old, if not dangerous, steamboats, most of them bought at second hand many years ago.

The tourist enjoying the delightful climate of the "American Mediterranean," when all is cold and snow up North, will be particularly surprised to find that the wonderful harbor of Trinidad boasts of only two or three motor boats. Those in existence are used as tenders in taking passengers between the shore and the ships which, because of shallowness along the shore, have to anchor from two to four miles from Port of Spain. Throughout this wonderful landlocked gulf there are all sorts of possibilities for developing the motor boat commercially and as a sport.

To the manufacturer of boats or engines who has a few weeks to spare this winter I would strongly recommend a trip of exploration about the "American Mediterranean," followed by a determination to start an energetic educational and selling campaign.

PARAGON REVERSE GEAR

We keep telling you about the "PARAGON" because we know that you want the best gear. Consider that over 50 of the best engine manufacturers are using the



"PARAGON" because, in their judgment, it is the best gear that they can give their customers. (And we can prove it by showing you photographs of the "PARAGON" attached to their engines.)

What stronger evidence can you want that it is the gear you ought to have?

Manufactured in Taunton, Mass., by the
Evans Stamping & Plating Co.

BRANCHES—Walter J. Forbes, 243 Columbus Ave., Boston, Mass.; Bowler-Holmes & Hecker Co., 141 Liberty St., N. Y. City; J. J. Farley, Machinery Dept., Bourse, Philadelphia, Pa.; Unger & Mahon, 119 East York St., Baltimore, Md.; National Boat & Engine Co. of Fla., Ft. of Main St., Jacksonville, Fla.; James M. Wait & Co., 1206 Michigan Ave., Chicago, Ill.; H. Lippert, 2810 N. Eleventh St., St. Louis, Mo.; Marine Engine & Supply Co., 109 E. Seventh St., Los Angeles, Cal.; J. C. Shadegg Engine Co., 315 Third St., St. Minneapolis, Minn.; Handled in Canada by the Canadian Fairbanks-Morse Co., Ltd. Australian Representatives:—White, Fraser & Best, Sydney.

Safety at Any Cost



This last season has seen an appalling number of accidents on the water—most of them due to carelessness in rowboats and canoes.

Kenyon Pillows

In these boats would have saved every life. "Safety at any cost" sounds like a ridiculous slogan when you consider the cost of a Kenyon Pillow. It can be used for a comfort maker, too, for it is soft and sturdily made.

On sale by prominent dealers everywhere, or by paid Parcels Post at \$1.25 each.

THE R. L. KENYON COMPANY
370 Meadow Street Waukesha, Wis.

Motor Boating has the largest guaranteed net paid reader reaching circulation in the marine field—both quality and quantity.

The Improved BALL REVERSE GEAR for Motor Boats

Most Reliable

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Four Sizes Carried in Stock

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April 8, 1902
Nov. 8, 1904
Jan. 13, 1904



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AMERICAN

Americanize Your Boat

Install an AMERICAN Motor in your boat and enjoy the full pleasure of motor boating and obtain constant, efficient service with your work or fishing boat. Made in all sizes from 2 H. P. to 30 H. P. (one to four cylinders) both medium and heavy duty types for all kinds of boats up to 50 feet in length.

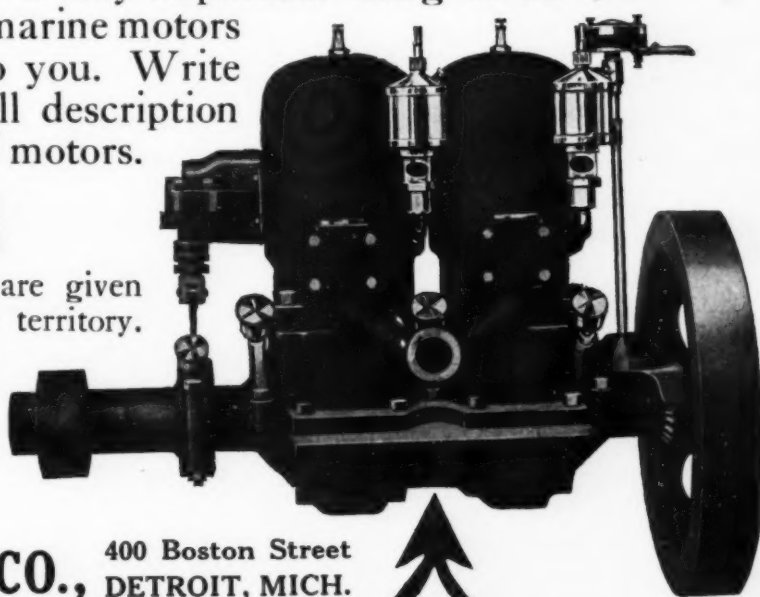
Our AMERICAN motors have attained a world-wide reputation as the most simple, reliable and economical 2 cycle marine motors on the market. They operate on **kerosene** or gasoline, also petrol, benzine, distillate, alcohol or naphtha. AMERICAN motors can be found in every country on the globe, giving daily, satisfactory and reliable service.

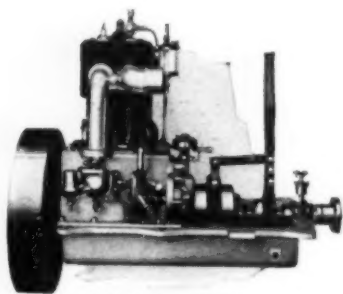
Our AMERICAN motors are made from the finest materials by expert mechanics, in our own great factory, one of the largest and best equipped engine factories in the world. Our liberal guarantee of quality is backed by our half-million dollar organization and long record for fair and honest dealings with our thousands of customers everywhere. The responsibility of the Company is a very important thing to be considered when you buy marine motors—it means a great deal to you. Write for free catalog giving full description and prices of AMERICAN motors.

DEMONSTRATING AGENTS WANTED

Good live Agents and Dealers are given liberal discounts and exclusive territory. Write for terms. Our AMERICAN motors are very easy to sell because of their wonderful simplicity, superior quality, reliability and low price.

AMERICAN ENGINE CO., 400 Boston Street
DETROIT, MICH.





Model B—9 H. P.

NO Gasoline power plant has ever been called upon to do the work that the Scripps has.

No other motor has ever successfully traversed the Whirlpool Rapids of Niagara.

No other motor has driven a motor boat across the Atlantic.

No other motor enjoys the confidence of experienced seamen throughout the world.

In a crisis it has *never* been found wanting.

When men attempt a hazardous trip where their life depends upon the reliability of the power plant, they *invariably choose the Scripps*.

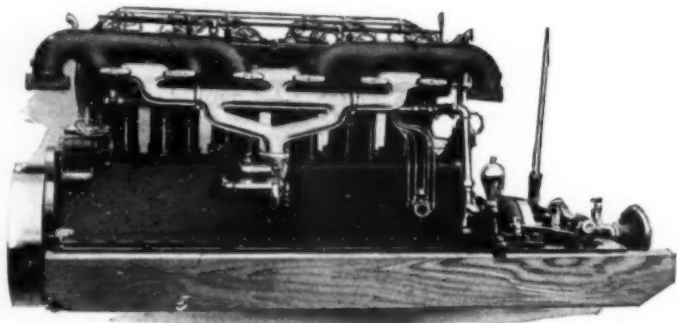
As Captain Thomas Fleming Day so well expresses it in the story of his trip from New York to St. Petersburg—

"When an old shellback gets so attached to an inanimate thing like a gasoline motor, that he cannot bear to part with it, no further questions are necessary as to its efficiency.

"During the passage across, night after night found me below watching the little machine as tireless and as seemingly happy as a cricket.

"There may be motors of other makes in the world, but there is *only one motor that I have ever cared for.*"

Captain Larsen, the first man who successfully navigated the terrible Whirlpool Rapids at Niagara, speaks in equally complimentary terms of its great dependability and power and admits that he owes his life to its reliability.



Model D—Heavy Duty 96 H. P.

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REMEMBER THIS—

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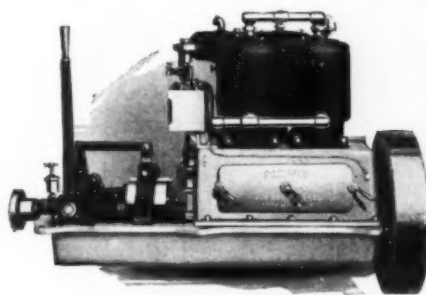
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PPETER W. LANGGAARD, who on October 23rd successfully shot the Niagara Rapids, nearly losing his life in the Whirlpool, insisted upon the use of a Scripps power plant, about which he has this to say—

"Had it not been for its absolute reliability, I would never have been able to pass through the whirls of the Rapids without losing my life.

"In fact, it worked so well that I became over-confident when I reached the Whirlpool and was not satisfied crossing it once, but attempted to pass through the vortex the second time to furnish an additional 'thriller' for the moving picture machines.

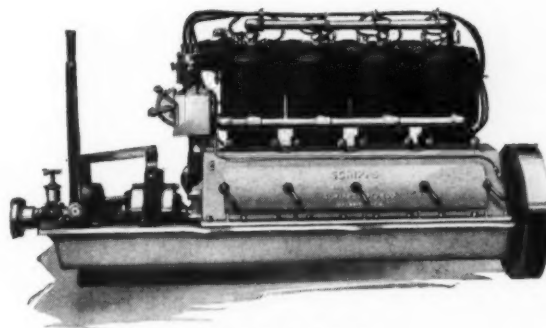
"It was here that I made my mistake, for I did not take into account the mass of driftwood which collects in the pool.

"I should have known that my propeller could never be expected to 'saw wood.'

"And therefore, when a log became lodged in my wheel, I did not condemn the motor for stopping.

"My appreciation of the work your Model M Motor performed for me in such a wonderful manner, is so deep that I find it hard to express myself other than to say that if I am ever called upon to make another hazardous trip in a motor boat, I will insist upon a Scripps motor."

Something more than mere claims for efficiency and reliability are necessary to inspire such confidence and trust.



Model K—48 H. P.

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Why not? You endow your boat with a personality.

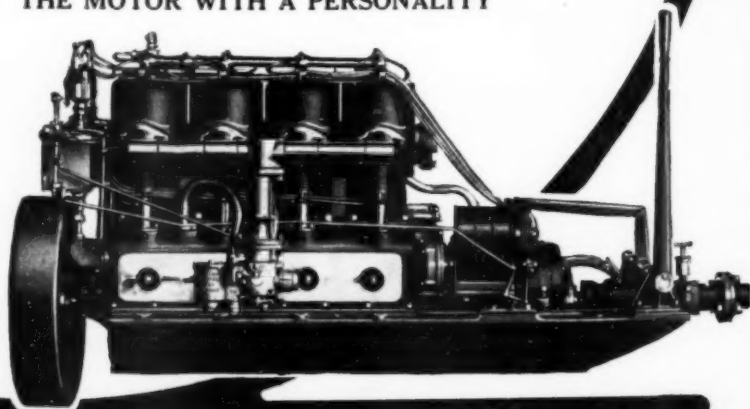
Of course, you think of your craft as of the feminine gender—she is almost a sweetheart to you—a thing of beauty and a joy forever,—or ought to be, depending probably upon your engine. And so why not a personality partaking of the engine builder in the engine itself?

We are surfeited nowadays with volumes about machine perfection, — jigs, — templets, — interchangeability, — micrometer measurements. Certainly,—of course!! Do we not live in this day of grace—1913? No manufacturer can hope to stay in the game who has not all of these facilities and does not do all of these things. But something more than machine precision is necessary

in the building of your ideal marine engine—the impression of some *mighty personality*, some *mechanical genius*, some *master mind* to turn plain iron, steel and bronze into a thing of life. Such a personality is Mr. "Joe" Van Blerck. He has put a little more speed, a little more power, a little more of that almost human response to the touch of the throttle, a little more reliability into his motors than will be found in any other engines. He is THE MASTER MARINE ENGINE

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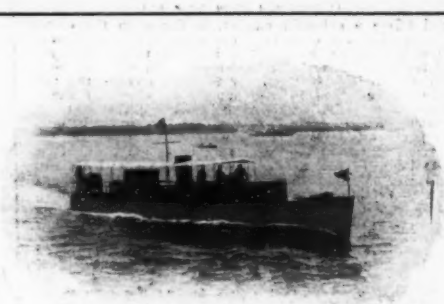
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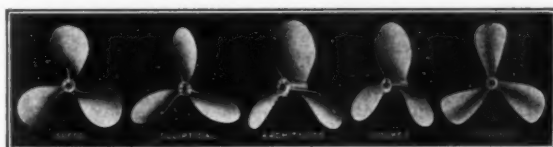


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The Engine Industry.

(Continued from page 57)

and offers a splendid market, is found in the costly yachts of every country. These were formerly wind or steam driven, but the tide has now turned in favor of the gas engine. I am indebted to the October number of *MoToR Boating* for figures showing the tremendous advance in the popularity of the internal combustion engine in this field during the past six years. These figures show that while in 1907 only 32 per cent. of our yachts were motor powered, the percentage has increased in 1913 to 53 per cent. It is inevitable that the motor shall supersede both sail and steam, for it has advantages which particularly suit it to the needs of the yachtsman. First among these is the fact that the modern motor is absolutely reliable. It is also silent, clean and economical. The yacht is not at the mercy of the wind as when under sail, neither is the ship's company continually bothered by the dirt of coaling. Moreover, gas-powered craft call for smaller crews.

Another good market exists among the owners of auxiliaries, mostly old sail boat men who still stick to the wind-jamming game, though they are willing to concede that a small gasoline engine is a handy thing to have bolted to their keelsons. The number of gas-powered auxiliaries has advanced from 13 per cent. of the total to 16 per cent. in the last six years. I have no figures at hand to show the advance of the gas engine over the steam engine during the same period, but it must be surprising.

American manufacturers are not alone dependent upon the home market for business. As a matter of fact, those who have taken the trouble to develop foreign fields are finding that their export business is a very large part of their total output. Export business has one great advantage in that much of it comes at a time of year when the home market is dull. Another is that it is not distributed by local financial flurries. During the past two years the demand abroad for American engines has increased considerably. This, I believe, is due almost entirely to the fact that they are becoming better known. The company in which I am interested has found that the sale of one engine abroad almost always leads to the sale of at least another, and this is probably the experience of other builders whose product is such as to deserve confidence.

It seems unlikely to me that the gas engine will undergo any radical change in the near future. The greatest chance for improvement is in the matter of fuel, and that is where the most radical changes may be expected. The price of gasoline is mounting so steadily that it will be only a question of time before it is impossible for ordinary engine operation, and some other cheaper fuel must be found. This evil day is being postponed by the successful use of kerosene, but how many years will it be before the price of kerosene also soars?

A number of cheaper fuels are now making their bids for popular favor, but at this time all of them have disadvantages which have not been overcome. Crude oil as used in the Diesel type of marine engines is both cheap and efficient, but the engines of this type are not popular in small units for marine work, and, moreover, the supply of crude oil is already being cut down by higher distillation. Producer gas is cheap, and remarkably good results are claimed for some of the outfits on the market, but the average user is still skeptical as to the probable behavior in a seaway of a boat operating on this fuel. There are some prophets abroad in the land who proclaim alcohol as the remedy for all our fuel troubles. The present price is, of course, prohibitive, but the advocates of this fuel contend that if certain government restrictions were removed, and the demand were large enough to justify manufacture on a large scale, that alcohol could be made in unlimited quantities, and retailed at considerably less than half the present price of gasoline or even kerosene.

Who can guess what direction the next "jump" will take?

Southern Cruising Grounds.

(Continued from page 7)

cover this route two or three times a week are obliged to lay up for more than a day at the mouth of either of the canals.

Entering Three-Mile Canal the current, which is a good one all the way to Gulf, is with you, and the 75 miles down to Fort Myers present a stretch which any boat manufacturer would like to make his trial trips on—going down. Lake Hippocatchee, separating this short canal from the Caloosahatchee, will be crossed with one of the crew hanging over the stern ready to cut out the weeds as they clog the wheel, but once over this 6-mile stretch, it is all plain sailing for a draught not exceeding four feet. The Everglades gradually drop behind and the rich bottom lands above La Belle, where sleek cattle and fat pigs graze and root, give way to the truly tropical vegetation of the lower Caloosahatchee. Along these upper flats, where the finger posts, reaching fifteen feet in the air, show to what depths the river reaches in flood times, the chances for a good camera shot at a 'gator are plentiful, for where the piglets come to drink the saurians wait to eat, but take a disappointed man's advice and don't wait until you are within three feet of your prey before letting go for a good one. Not that the 'gator is dangerous, but that once he wakes up he can turn on a dime, hand you a nickel's change and be a 100 fathoms down (stream) before your paralyzed finger clicks the button.

Caloosahatchee is Indian for "beautiful river," and as an instance of the accuracy of the Government's Coast Pilot it is pleasing to note that the English "river," which is almost universally tacked on to this already complete word, is omitted when this authority mentions the stream. Beautiful the river is with its palms and moss and orange trees lining the banks, but "beautiful" is almost invariably amended to "crooked" by the time the average stranger has run its length. So devious are the windings on this last stretch of the run to the West coast, that an emergency anchor on the stern deck is a necessity, while the boatman who gets through without tying three bowknots in his tiller line and a half hitch in his neck is a rarity.

At Fort Myers, where Thomas A. Edison and a stern wheel of the same river name made their home, supplies may be taken on, and the journey home commenced by way of Punta Rassa, the Ten Thousand Islands, and Cape Sable, but most folks who have made the trip want to go back over the course to retabulate the birds, explore the upper reaches of the mammoth lake, or experience again the impressions of the pioneer in Florida's newest waterway.

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The New Economic Motor, 2 cylinder, 3 port type, with full equipment, coil, batteries, switch, grease cups, Monarch Carburetor, etc. 14 and 6 H. P. Best material and workmanship. Special life time guarantee. Complete, \$70. 14 H. P. \$140. One cylinder, 2 H. P. fully equipped, \$42. One cylinder, 7 H. P. fully equipped, \$75. Write today for full information.

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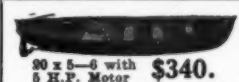


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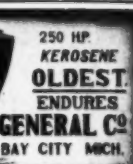
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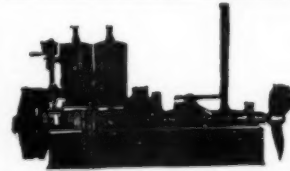
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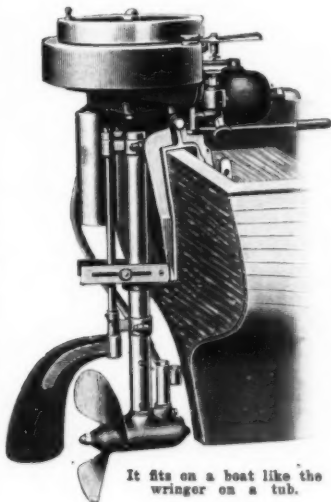
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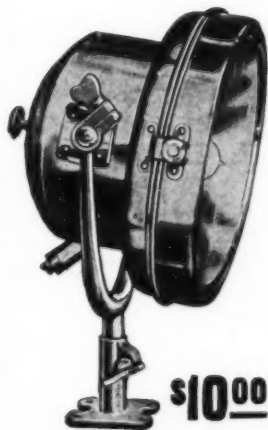
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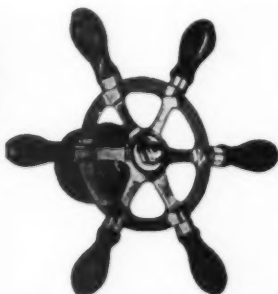
It is death on fire of all kinds, gasoline, gas fumes and electricity. Its operation is quick—Pull out handle, turning it to left, then press forward with nozzle valve open. It throws an unbroken stream of liquid chemical thirty feet or more with ease. This chemical is harmless on any substances except fire, and will not deteriorate nor freeze. The Escos Gun refills as often as discharged. Refiller cans contain two recharges, supplied with directions, for \$1.25. It is positive and reliable in emergency because it operates with the simple plunger action. Construction is all brass, excepting special gasket and wood handle. The highly polished brass finish is permanent, making the Escos Gun a handsome wall fixture.



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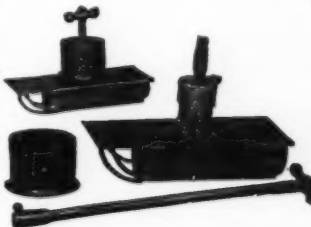
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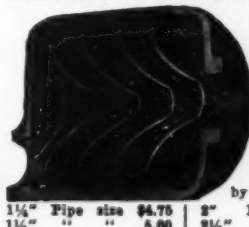
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Perfect motor operation on kerosene fuel has been the aim of gas engine experts and inventors for years. At last it is a reality—with the new Hitchcock Vapor Heater. In view of the claims of others, we would like to have every prospective motor buyer investigate carefully and compare demonstrations of Hitchcock Engines operated on kerosene with any other kerosene motor—in fact, with any marine engine of equal size operated on any fuel. That is a fair challenge.



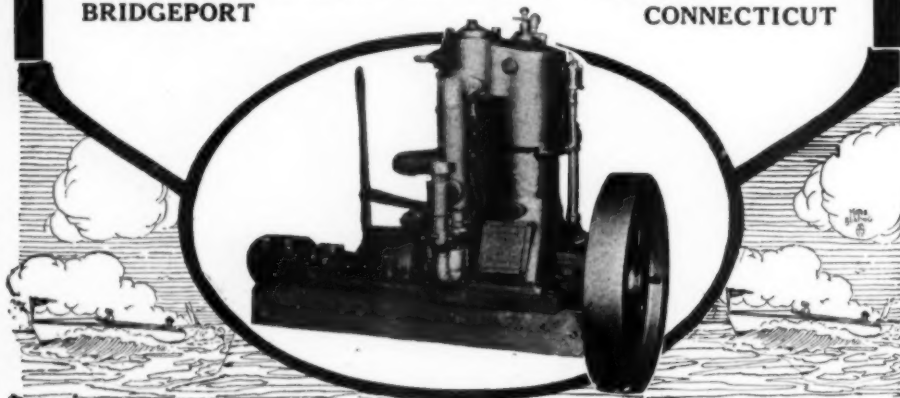
The Vapor Heater eliminates smoke, carbon and pounding. It gives more power and greater economy, saving approximately 50% on fuel. It prevents the vaporized fuel from condensing before the explosion. A controller and thermostat keep the temperature of the mixture at any desired degree, independent of the speed of the engine.

All Hitchcock Engines are equipped with this Vapor Heater without extra charge. The same engine can be run on kerosene, gasoline or distillate as desired, without changes.

Hitchcock Engines are of the four-cycle type, built especially for heavy continuous service.

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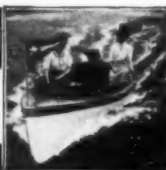


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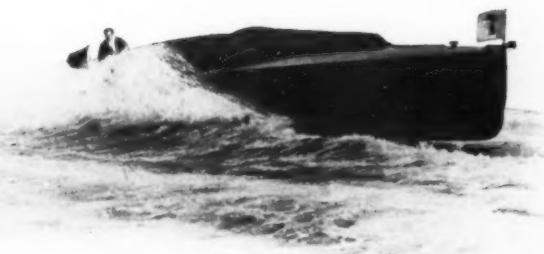
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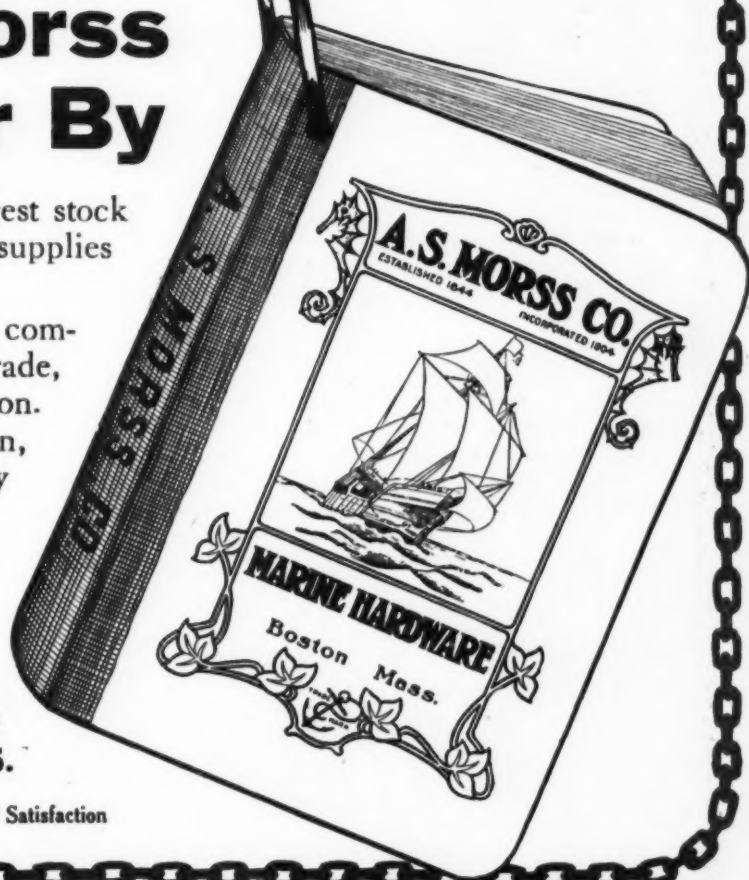
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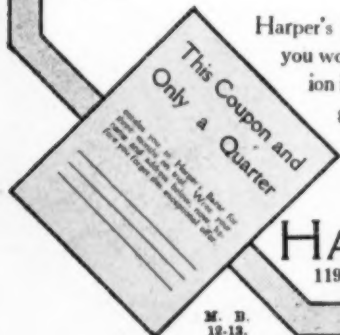
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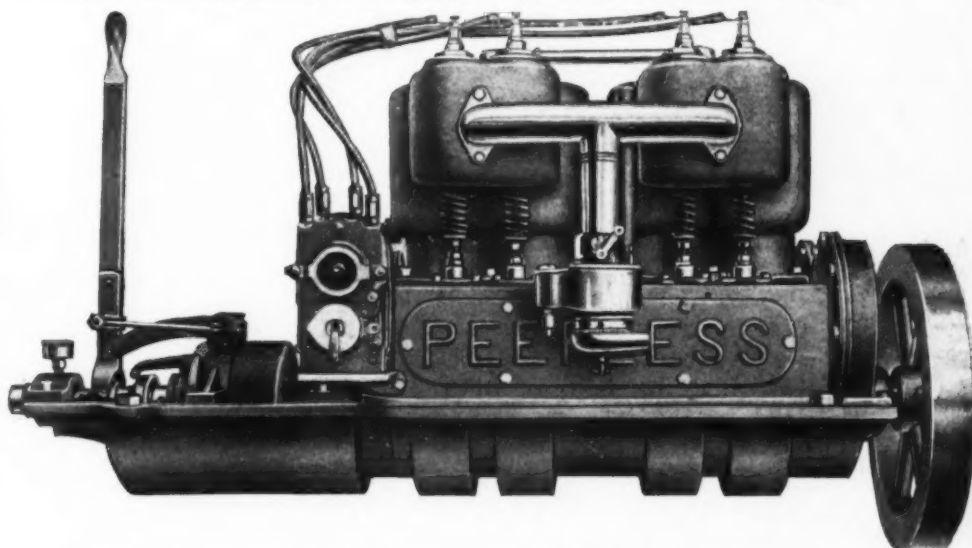
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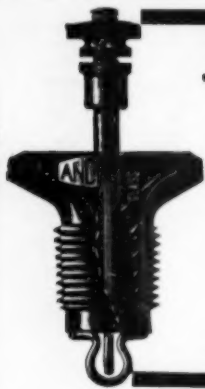
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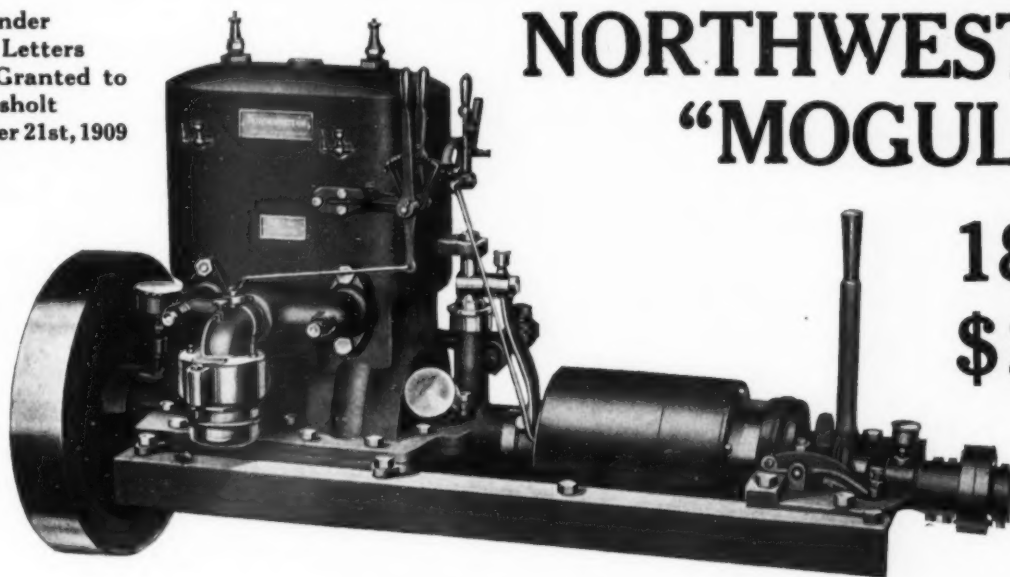
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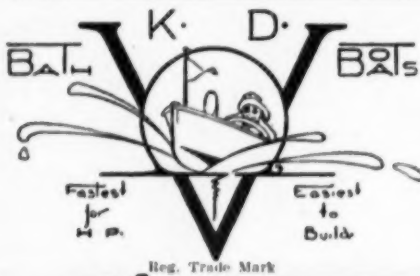
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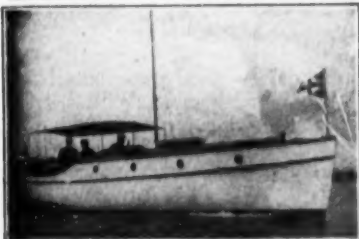
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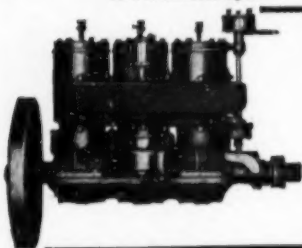
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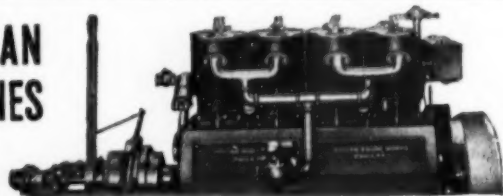
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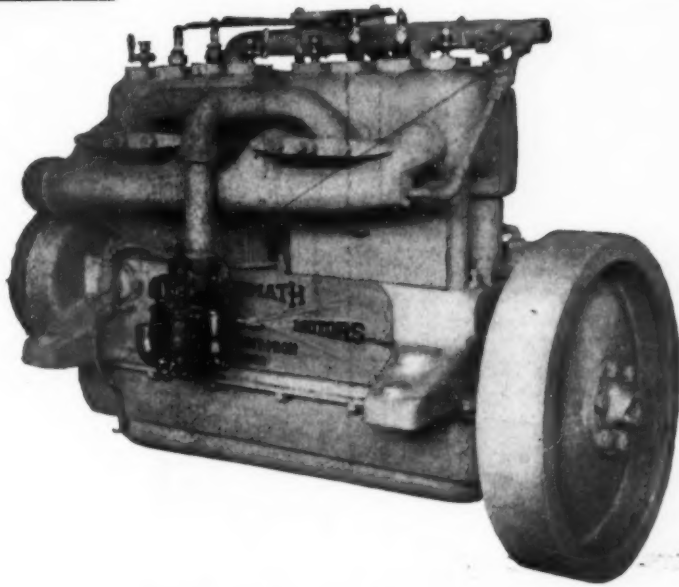
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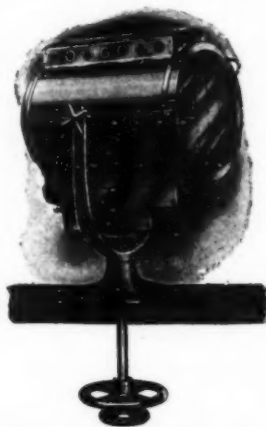
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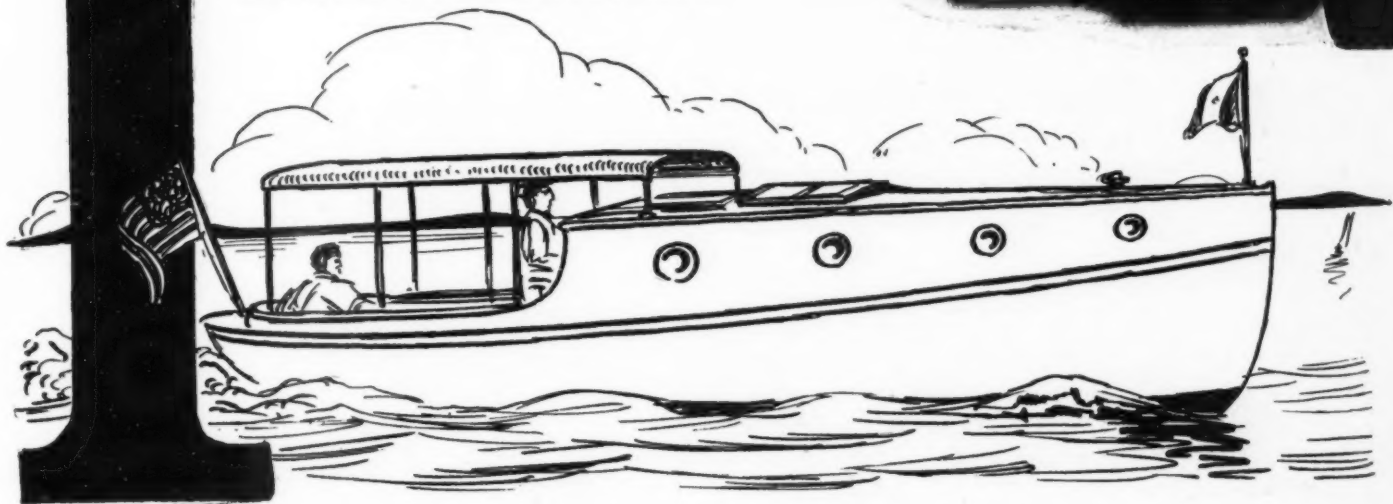
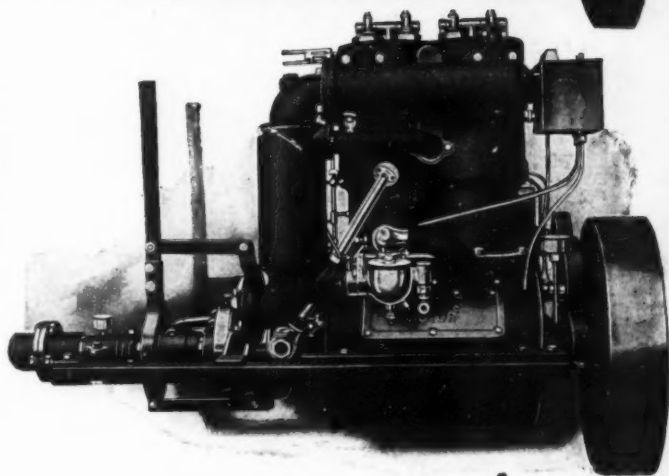
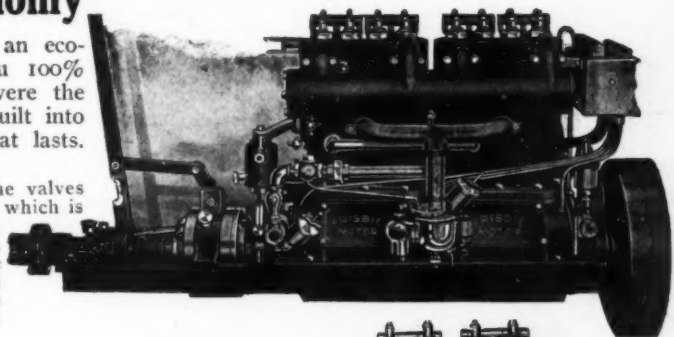
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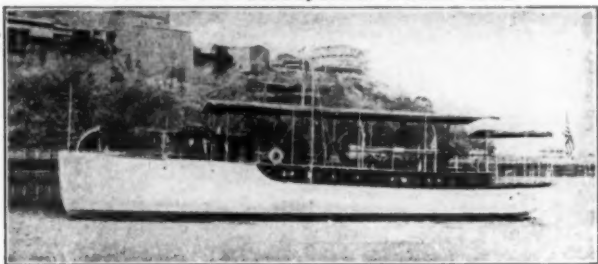


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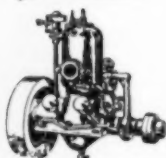
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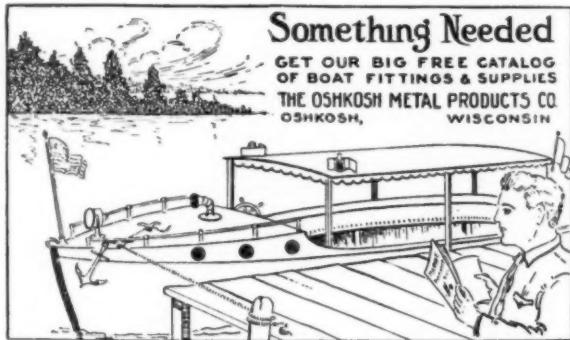
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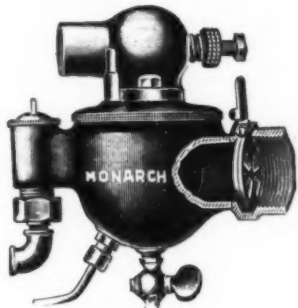
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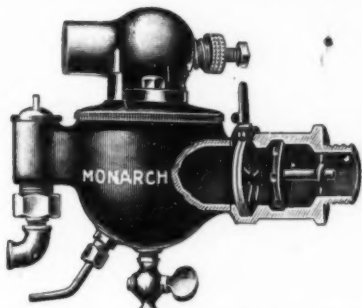
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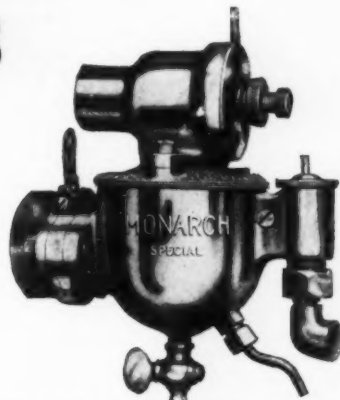
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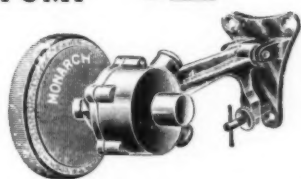


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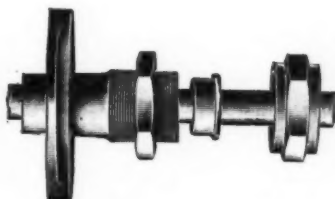
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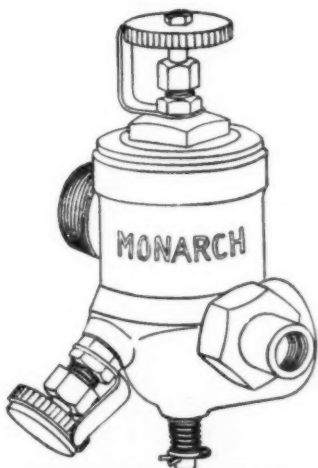
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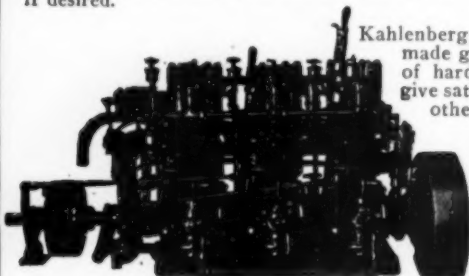
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Kahlenberg

This motor reverses from full speed ahead to full speed astern like a steam engine. It burns kerosene, distillate, or benzine for fuel just as well as gasoline and consumes less than one pint of fuel per h. p. per hour. Self starting. When running on light load you can cut out one or more cylinders if desired.



Kahlenberg Motors have made good in all lines of hard work. They give satisfaction where others fall down.

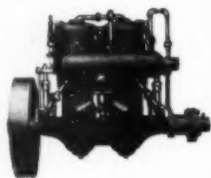
Made in medium and heavy duty types. 2 to 85 H. P. 1 to 3 cylinders.

KAHLENBERG BROTHERS COMPANY

Monroe & 12th Sts., Two Rivers, Wis., U.S.A.

KENNEBEC

Gasoline Engines



If you are one who demands full service and reliability from a marine engine, you cannot be better satisfied than by getting a Kennebec. This is an engine which will give you perfect satisfaction for years to come. It will run day after day, year in and year out, with the greatest economy and the least trouble, and you can risk your life on it if necessary, because it won't fail you.

The Kennebec Engine gives thirty to forty per cent. more horse power than its rating. We allow them ample bore and stroke and rate them honestly at moderate speeds, because an engine designed for hard, continuous service like the Kennebec must run at moderate speed if it is to have durability and give permanent satisfaction. We build power into these motors and it has got to come out.

The Kennebec is sturdy and reliable enough for the fisherman who must use it every day, and handsome enough for the finest pleasure boats. Every engine user wants Durability, Economy and Easy Accessibility no matter what type of service he requires. Ask any fisherman what he thinks of the Kennebec. If he has ever seen one working, we know what his answer will be.

14 Models. 2 to 16 H. P. 1 to 3 Cylinders. Two Cycle.

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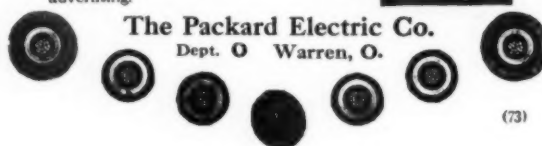
TORREY ROLLER BUSHING WORKS
BATH, MAINE, U. S. A.

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Put Packard Cable in your boat when you rewire it. You won't have to rewire again next year. Packard Cable is made to resist heat, water and oils for years. Send for sample, folder and price list, mentioning name of your dealer.

A Book You Need

Makes you familiar with every electrical device on your boat. Contains 48 pages of real information about generators, storage and dry cell batteries, separate lighting sets, wiring, high and low tension ignition and U. S. Marine regulations, including lights, life preservers, fire extinguishing apparatus, etc. Sent postpaid for 25 cents to cover cost of printing. Contains no advertising.



The Packard Electric Co.
Dept. O Warren, O.

(73)

Why Spend Money Repairing an Old Motor When You Can Buy New Motor for Same Sum?

OUR LATEST FACTORY CLEAN UP

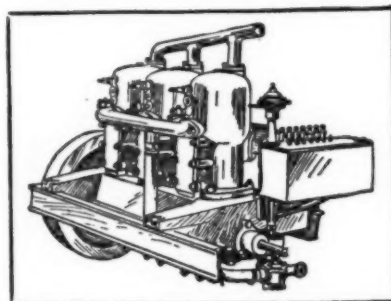
New Reliance Motors

Regular Price

\$350

OUR PRICE

\$95.



Equip your power boat with a modern, superior motor—3-cyl. valveless—2-cycle—15 H.P.—5½-in. bore—5-in. strokes—Complete with oiler. Other Big Bargains in Two- and Four-Cycle Motors.

CAN BE USED ON MOTOR BOATS—AS STATIONARY ENGINES—OR FOR ANY PURPOSE SUITED TO GAS ENGINES

Write for "Our Price Wrecker"

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HOWARD 31 Ft CRUISER

Complete

\$1080.00

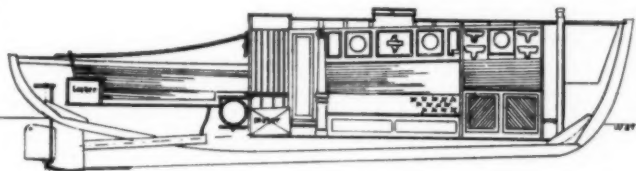
HOWARD

CRUISERS

The New HOWARD Thirty-one Footer

Do you know of any boat which is as near ideal in the points of size, arrangement and construction, as the new Howard Thirty-one-foot Cruiser shown herewith? Every boat enthusiast interested in cruisers knows just about what he can expect in accommodations for a boat of this size and price. Study the two plan views and see if you do not agree that this boat is really exceptional in every way. It is unusually well built, strong and seaworthy, safe and comfortable in the roughest weather.

Our new plant, equipped with the latest and most improved type of machinery, enables us to build a strictly high class boat at this low figure. You could not have it built to order for anywhere near the price, and you will not find any stock boat to equal it.

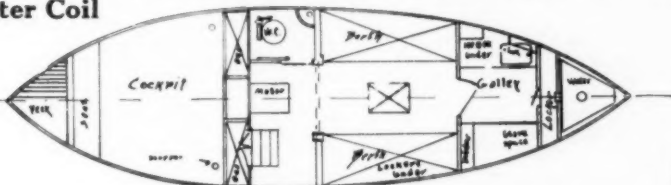


The construction is high grade and first class in every respect. White oak frame, cypress planking, copper and bronze fastenings, oak and cherry deck and interior trim, interior finish natural or white enamel over red cypress, self-bailing cockpit, one man control.

**Raised Paneled Bulkheads of Solid Oak
Drip Pans Under Gas Tank, Draining Overboard**

Galvanized Lined Lockers Ice Box with Water Coil

The equipment and the fittings of the highest quality throughout. The motor is a Peerless or Fulton, optional, giving speed of 9 M. P. H.; brass steering wheel, cleats and chocks, electric lights, galvanized iron sink and ice box, porcelain enamelled lavatory, flag poles and sockets, linoleum for cabin, etc., etc.

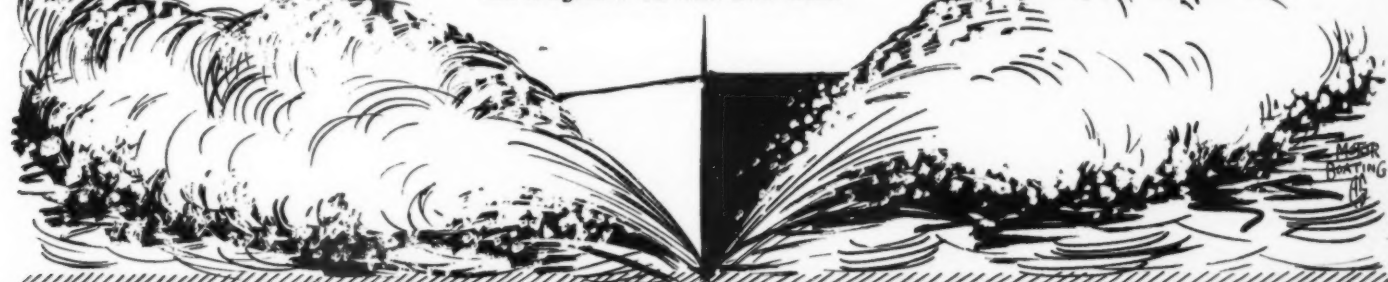


The output on this model is limited, and we expect them all to be contracted for very early in the season. Of course, to make the price possible, it is necessary to put a certain number through our works at one time. After these are all contracted it will be impossible to accept individual orders at the same price. Therefore investigate at once.

Blue prints and specifications upon request

Howard Thirty-one Footer. F.O.B. Westfield \$1080. Canopy complete with side curtains \$45 extra.

**The Howard Twenty-seven Foot Cruiser at \$850 is Still the Greatest Value
and Bargain of Its Size Ever Built.**

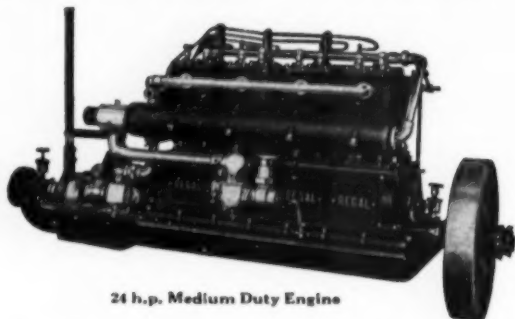


HOWARD CRUISER WORKS

WESTFIELD, NEW YORK

YOU cannot know the highest economy and reliability attainable in a fishing boat until you have owned one with a Regal engine. Neither can you have experienced the fullest pleasure in a motor boat or cruiser before having taken a trip in one equipped with a

REGAL ENGINE



24 h.p. Medium Duty Engine

You would enjoy the silence and the cleanliness obtained by their enclosed design and accurate mechanical construction. There is not a spot on the whole engine that is uncomfortably warm to the touch. The exhaust manifold is waterjacketed, and our own specially designed water-cooled muffler insures coolness to all exhaust piping. The noise of the exhaust can scarcely be heard, sounding more like that of a small steam engine. Long, large bearings, practical design, careful assembling and a positive, unfailing oiling system insure reliability and long life. Hot air connections to the carburetor assist in operating economy.

Any Regal engine will be constructed to burn kerosene. No extra charge is made.

REGAL GASOLINE ENGINE CO.
74 West Pearl Street - - Coldwater, Mich.

How Many Miles = To the Gallon? =

The type of engine and type of your boat are adjusted to give you the maximum—if there's no fuel waste? Don't you get all the manufacturer promised you? Then there is fuel waste. Where? Look at your piston rings—if they leak you're losing power and wasting fuel. If they're old style piston rings and not brand new, they leak.



Piston Rings (PATENTED)

can't leak—there's no opening in them—no slot as in old style—where gas can escape down. Install them and get what the manufacturer designed his boat for—all the power, and conservation of fuel.

Features

Decrease carbonization because surplus oil is kept back. Made of Processed Gray Iron, softer than the cylinder—yet will last as long as the motor. Possess natural spring and lasting elasticity. Made in all sizes, easily adjustable.

We've Issued a Booklet

that tells what piston rings are made for—why Leak-Proof Rings mean so much to power and cylinder life; why you should use them. Ask for it—it is free and informative.

Leak-Proof Piston Rings are on sale at all up-to-date supply houses, repair shops and garages.

Manufactured by

McQuay-Norris Mfg. Co., Dept. B., St. Louis, Mo.

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DONT BLAME YOUR MOTOR. GET A

BRYANT & BERRY

PROPELLER

SPEED GUARANTEED

We Guarantee 1 to 3 Miles Per Hour

To Increase the Speed of Your Boat

This is the guarantee we have been making for the past five years, the guarantee under which we have sold thousands of B. & B. propellers. This is your protection and insurance of satisfaction when you buy a B. & B. wheel. You don't have to depend on argument or unfounded claims.

B. & B. propellers give you the highest degree of speed and power your boat and engine are capable of. Their efficiency is as near perfection as it is possible to attain. They reduce the percentage of slip and produce the maximum propelling force for the horsepower used.

The materials and workmanship used in B. & B. wheels are equal in superiority to the design. We use a special bronze as strong as steel. The accuracy and finish are beyond criticism. And in spite of all this, our prices are lower than for any other make of wheel.

When you buy a propeller, get a genuine B. & B.—don't accept a substitute or imitation. Look for the name "Bryant & Berry" stamped on the hub. Certain peculiarities of design make it impossible for copies of our wheels to equal the originals in efficiency.

BRYANT & BERRY COMPANY

28 WEST ATWATER ST. DETROIT, MICH.

Canadian Fairbanks-Morse Co., Canadian Sales Agents.

E. J. WILLIS CO. - - - New York Agents

A Detroit Oiler is a profitable investment

A Detroit Force Feed Oiler insures you against wasted oil and a damaged engine.

It guarantees that your engine won't be laid up by the many troubles that come from faulty lubrication.

And it pays big dividends in freedom from bother and delay.

There is a Detroit Force Feed Oiler for every engine. Made in all sizes and all numbers of feeds with pulley, ratchet and gear drive.

A Detroit Oiler remembers for you

The Detroit Oiler starts and stops with the engine. It automatically changes its rate of feed as the engine speed changes.

You never have to bother with a Detroit because it remembers for you.

Once adjusted, it never has to be regulated. It gives you efficient, automatic, dependable, trouble-proof lubrication that never requires any attention at all.

Write today for catalog P64 and full information stating in what kind of engine you are interested.



On sale in Canada by the Canadian Fairbanks-Morse Co.

DETROIT LUBRICATOR COMPANY.
DETROIT, U. S. A.

Largest Manufacturers of Lubricating Devices in the World

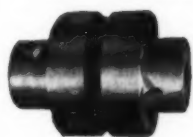
"The Price of Rigidity is Trouble"

FRANCKE FLEXIBLE COUPLINGS

SAVE TROUBLE AND EXPENSE

EASILY INSTALLED. Prevent binding of shafts. Prevent leaky stuffing boxes. Keep bearings cool. Make misalignment harmless; no extra thrust bearing.

You Need One On Your Boat



USED ON

Dream
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Gruisers,
Tow Boats,
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Simple

Effective

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Inexpensive

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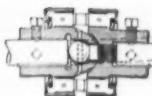
Francke Flexible Couplings are made for any size engine at any speed. TO SELECT YOUR SIZE, select the *smallest* coupling which will take your *largest* shaft end. Then check from horsepower table to see that coupling has power enough for your engine. If not enough power—take a larger coupling covering the power.

Special need of flexibility in all Motor Boats

In the very nature of things, a motor boat does not provide a substantial foundation for an engine. The engine or reverse-gear shaft and propeller shaft are therefore seldom in line. Francke Flexible Couplings make shafts that are out of line run just as well as shafts that are in line. Requiring no thrust bearings to protect them, they save the cost of a thrust bearing; they save the expense of accurate alignment of shafts; they save the trouble caused by shafts getting out of line; they save gasoline. They make the boat go faster.

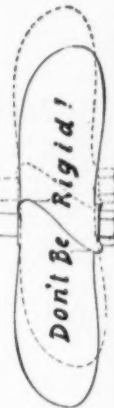
Takes care of Thrust

When going "ahead" the thrust is transmitted by the propeller shaft, through the central bolt, without putting any strain on the flexible pins. When going "astern" the central bolt takes the pull of the propeller.



Saves Realigning the Engine

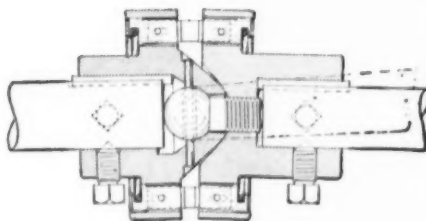
When the engine turns over easily with the boat ashore and hard after the boat is put in the water, a slight distortion of the hull is the cause and a realignment of the shaft is the remedy, but the cure is not permanent, for the distortion comes back when the boat is running and keeps increasing the faster she runs. This distortion is the cause of slower speed, hot engine and reverse gear bearings and leaky stuffing boxes, and the only permanent cure is a flexible coupling.



THE SMITH SERRELL CO., New York, N. Y. Flagship "Dream," July 14, 1913.

Gentlemen—I used your flexible coupling on my yacht, "Dream," in the Bermuda Race this year, and consider it one of the most important necessities to a motor boat. I found it to ease the engine very much, and to assure the alignment of the shaft. I would never build another boat without a flexible coupling, and consider it absolutely necessary to any boat which encounters rough weather, whether the engine and shaft be perfectly aligned or not.

Very truly yours,
(Signed) C. L. LAGEN.



Lightweight Steel Hydroplane Couplings Special. Write Us.

In ordering, give shaft size and keyway at both ends, horsepower and revolutions. At your dealer's or direct from

SMITH-SERRELL CO., Inc.

GENERAL SALES AGENT FOR

THE FRANCKE COMPANY

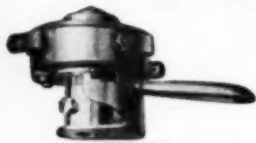
WEST STREET BUILDING

NEW YORK CITY

Size No.	Engine or Reverse Gear end can be any size between these limits	Propeller Shaft end can be any size between these limits	Out. Dia.	Length Over All	HORSE POWER THE COUPLING WILL CARRY AT VARIOUS REVOLUTIONS								Net price F.O.B. New Brunswick, N. J.
					300	400	500	600	700	800	900	1000	
3 1/2	3/4 to 7/8	3/4 to 7/8	3 1/2	5 1/2	3	4	5	6	7	8	9	10	\$6.75
3 1/2 A	3/4 to 7/8	3/4 to 7/8	3 1/2	5 1/2	4	5 1/3	6 2/3	8	9 1/3	10 2/3	12	13 1/3	8.10
4	1 to 1 1/4	1 to 1 1/4	4	6	6	8	10	12	14	16	18	20	9.90
4 1/2	1 1/8 to 1 3/8	1 1/8 to 1 3/8	4 1/2	6 1/2	8 1/3	11	13 3/4	16 2/3	19 1/4	22	24 3/4	27 1/2	11.70
5	1 1/8 to 1 1/2	1 1/8 to 1 1/2	5	6 3/4	11 1/4	15	18 3/4	22 1/2	26 1/4	30	33 3/4	37 1/2	13.50
6	1 1/4 to 1 3/4	1 1/4 to 1 3/4	6	7 1/4	13 1/2	18	22 1/2	27	31 1/2	36	40 1/2	45	16.20
6 A	1 1/4 to 1 3/4	1 1/4 to 1 3/4	6	7 1/4	18	24	30	36	42	48	54	60	18.90
7	1 3/8 to 2	1 3/8 to 2	7	7 3/4	27	36	45	54	63	72	81	90	22.50
8 1/2	2 to 2 3/4	1 1/2 to 2 3/4	8 1/2	10 1/2	84	112	140	168	ALL SIZES STOCK SHIPMENT				31.50
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CUNO TIMERS ARE BUILT for CONTINUOUS SERVICE

Are Used by the Most Prominent Marine Engine Makers



PRICES

Without advance lever and sector, 1 contact, \$2.50.
Add 20c for each additional contact.

For advance lever and sector, add 50c.

For German Silver, add 50c.

Weight: 10 oz. Size: 3 1/4" diam.; 2 3/4" high.

Mailed on receipt of price. State shaft size when ordering.

This Timer is also incorporated in our High Tension Distributor; made for 3, 4, and 6 Cylinder engines. Write for bulletin DA.

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A Clever Device at a Low Price

Bulb protected while in use by a spring bronze guard.

When not in use bulb and guard slide into tube and cord is wound on reel attached to tube.

May be changed from a general light to concentrated light by sliding tube all or partly over guard.

No tangling of cord while in tool box. Packed in screw top tube.

Fitted with Edison socket, cord and connecting plug.

Highly nickel plated with enameled handle.

Size: 1 1/2" diameter x 8" long.

Mailed on receipt of price; \$1.50 with 10-ft. cord.

\$1.05 with 10-ft. cord; 6 candle power, 6 volt tungsten bulb, 40c additional.

Liberal discounts to the trade. Write for bulletin CA.

THE CUNO ENGINEERING CORPORATION
80 South Vine Street Meriden, Conn., U. S. A.
Manufacturers of Ignition and Lighting Specialties

Ten Reasons Why You Should Use Them:

Strong, rigid construction, no flimsy parts. Made either entirely of steel—rustproofed or of solid German Silver, highly polished.

Made of best materials and highest workmanship. Double ball bearings, self-adjusting. Assembled or disassembled without tools. Impossible to be assembled wrong. No nuts, screws or small parts to lose.

Foolproof—Troubleproof—Waterproof

Attractive quantity prices. Send for bulletin BA.

JUWEL KEROSENE YACHT STOVES

THE ideal stove for yachts and motor boats. It is small, compact, cleanly, odorless, economical, safe, inexpensive and always ready for immediate use. Burns with a hot blue flame and will cook a whole meal in a jiffy. Generates gas from kerosene oil.



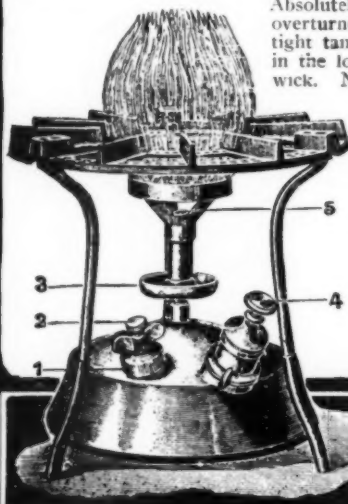
Absolutely safe, even if overturned while lit. Solid brass airtight tank. Won't leak or leave odor in the locker where you keep it. No wick. Nothing to get out of order.

The Jewell is made in all sizes and types of single and double stoves for all boating purposes and tastes. One model has swinging stoves you can fill without touching.

Guarantee

We guarantee the Jewell to be absolutely satisfactory, and will refund your money without question if it doesn't suit you.

Write today for catalog with prices on the different styles.



Globe Gas Light Co.
25-27 Union Street
BOSTON, MASS.

You Don't Want This To Happen To Your Boat!



Naturally not! To say nothing of the risk of personal injury, of life itself, that such a calamity would present, think of the money loss, of a whole season's pleasure spoiled! And yet every year we hear of motor boats burning, going up in disastrous explosions. The cause? Well, generally it's a leaky gasoline supply. That's why the

"Jasco Tank"

was developed—to make a storage for gasoline that should be absolutely leak, and danger, proof. We've succeeded. "Jasco tanks" are no new article. They've been used for years by careful motor boat users—we've hundreds of letters in our files attesting their excellence. Constructed seamless and leakless of drawn steel, thoroughly tinned, both inside and out, and carefully tested under hydraulic pressure. "Jasco tanks" are the only absolutely safe gasoline storage receptacles.

They are made in all standard styles and sizes. If your boat, however, presents special requirements, a "Jasco tank" can be supplied you promptly and at small additional cost.

Get one of our free U. S. Marine Signal Codes, printed in full colors. It's yours for the asking.

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Main Office: Phila. New York Office: Hudson Terminal Bldg.

Bid Good-by To Oars & Paddles



Let a Caille Portable Boat Motor take you anywhere you want to go over lake, stream or river. Can be instantly attached to square or pointed stern rowboats. Travels seven to nine miles an hour. A child can run it.

Caille Portable Boat Motor

is steered by a rudder like a launch—not by the propeller. Can be quickly adjusted to any angle or depth of stern. Starts with half a turn of the flywheel. Runs 7 hours on a gallon of fuel. Can be used in salt or fresh water.

RELIABLE DEALERS WANTED

The extensive advertising campaign we are about to launch will create a tremendous demand for these engines. We must have good live dealers everywhere to meet this demand. Send for our liberal dealer's proposition now—today—before someone else gets the territory.



We Also Build Marine Engines Up to 30 H. P.

These embody all sizes—from one to four cylinders. Ask for beautiful catalog. A postal brings all. Send today—now.

CAILLE PERFECTION MOTOR CO.
1202 Caille Street - DETROIT, MICH.

Erd

More Value— —for Less Money

is what you get when you purchase an Erd Motor
Why?

Because our experience of sixteen years in the successful manufacture of high grade gasoline engines, backed with one of the finest factory equipments in the country, is *your best guarantee* that the

NEW ERD 25 H. P., 4-Cylinder, 4-Cycle, Complete Unit Power Plant
is the best up-to-the-minute marine engine built, at the least possible cost to you.

This new Four-Cycle Erd has sounded a new note in marine motor construction. It bears all the refinements of the most up-to-date high grade automobile engines, a type acknowledged to be vastly superior to the average marine engine of today. And we have followed automobile practice further by producing these motors in large quantities with special tools, jigs and automatic machinery, thus enabling us to sell a four-cycle engine, with the highest quality of design, materials, workmanship and equipment, at prices heretofore unheard of.

SPECIFICATIONS

1. Four cylinders, cast en bloc.
2. Bore 4 in., stroke 5 in., 25 H. P.
3. Dual ignition, magneto.
4. All moving parts enclosed.
5. Positive circulating oil pump.
6. Crank shaft, drop forged, 1 7/8".
7. Special reverse gear on extended base.
8. All bearings interchangeable.
9. Oil retaining washers on shaft.
10. Wide foundation lugs allowing engine bed timbers to run past flywheel.
11. Intake gas gets the benefit of the exhaust heat, which allows the use of low-grade gasoline.

And Best of All-- THE PRICES

Standard Type, \$385.00
High Speed Type, 425.00

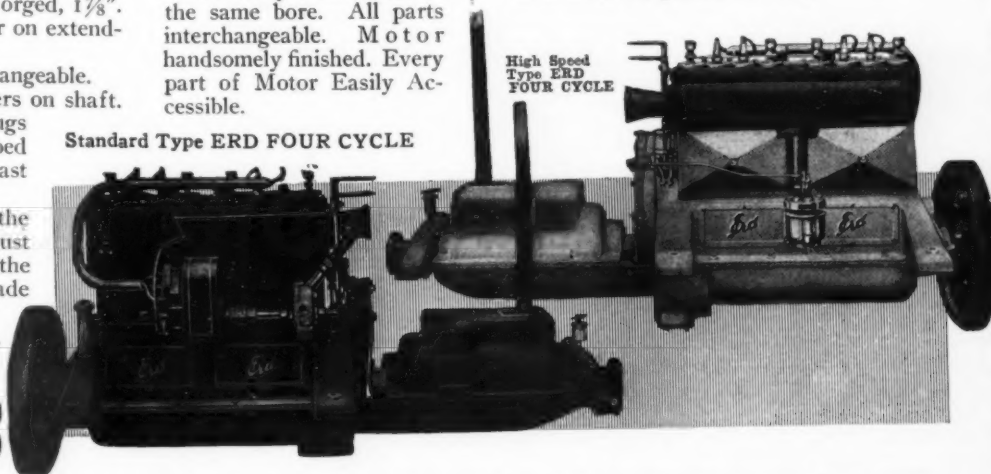
Here Are a Few of the Advanced Features:

Perfect control when running idle or with full load. No Vibration. Easy Starting. Bearings larger than those of any other motor of the same bore. All parts interchangeable. Motor handsomely finished. Every part of Motor Easily Accessible.

The High Speed Motor is equipped with Aluminum crank-case, base, clutch cover, hand-hole plates and water cover. Especially adapted for hydroplanes or wherever motor is placed forward.

Standard Type ERD FOUR CYCLE

High Speed
Type ERD
FOUR CYCLE



We have just received from the printers a neat, descriptive catalog of this motor for you—please write for it. If interested in smaller power, or featherweight racing machines, send for our 2-cycle catalog.

For further details write

ERD MOTOR COMPANY SAGINAW, W. S.
MICHIGAN, U. S. A.

HENRY MORGAN & CO., Ltd., Montreal, Que.: Eastern Canadian Distributors
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Wisconsin Motors

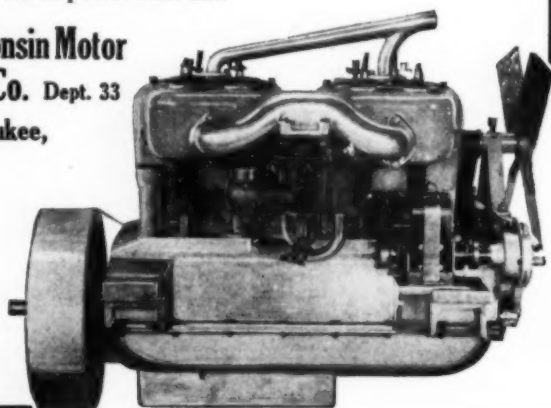
CONSISTENT

Wisconsin Motors not only earned the title of "Road Champion of America" by making a clean sweep of all the big road events this season, such as *Tacoma, Elgin, Santa Monica* and *Corona*, but also won the *Championship of Norway* by water. The motors went through these races without any adjustments whatsoever, demonstrating the absolute reliability under the most trying conditions. The oiling system never fails, and is one of the main features of this remarkable motor.

For speed, stability and power, Wisconsin Motors top the list. They start easily, run steadily, stand the wear and tear, and are always under perfect control. Made in all sizes—4 and 6 cylinder.

Write and we will tell you how well this great motor is adapted to power boat use.

**Wisconsin Motor
Mfg. Co. Dept. 33
Milwaukee,
Wis.**



OUR LATEST CREATION



15 FT. HYDROPLANE

Guaranteed to make a speed of 28 actual miles per hour with a three-cylinder engine, 4 in. bore and 4 in. stroke. Can be successfully built by any person of ordinary intelligence from our knock-down material. Write for prices and full particulars.

If you are in the market for a cruiser, family launch or runabout, we can supply your wants. **PIONEER KNOCK-DOWN MATERIAL** is the world's standard, and from which the amateur can build as good a boat as the best boat builder could build for him.

Send for our new catalog just issued.

PIONEER BOAT & PATTERN CO.
WHARF NO. 25 BAY CITY, MICHIGAN



The "SHAW" Propeller Patented

GUARANTEES Greater Efficiency and Gives More Speed Than Any Other Make.



OLD WAY
DISPERSIVE ACTION
WATER THROUST EFFORT
BRINGS WATER



NEW WAY
SHAW PROPELLER PUSHS WATER
DOES NOT DISPERSE
WATER THROUST EFFORT

is designed to secure the maximum thrust returns from every square inch of its surface—AND DOES SO. Eliminates objectionable over-squatting of the boat's stern, and minimizes vibration.

MADE OF THE FINEST MANGANESE BRONZE PROCURABLE.
Prices and further particulars

SHAW PROPELLER CO.,

Board of Trade Bldg.
BOSTON, MASS.



RELIANCE-ROCHESTER

MARINE

STEERING GEARS

A wheel
for every
type of boat



"Baby"
Reliance-Rochester
"A Perfect Little One"

Endorsed by the world's foremost designers and builders. For racing boats, runabouts, cruisers and work boats. We are the exclusive manufacturers of the scored drum type of steering control.



Built to meet the demand for "Reliance-Rochester" of smaller dimensions and of the same high grade material and workmanship.

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W. S. HALL COMPANY
1223 Cortland Street, Rochester, N. Y.

Eastern Distributors for America's Highest Grade Marine Engines

We handle a complete line of high grade engines, including several of the most favorably known marine engines made in America. No matter what size or type you are looking for, from a yacht tender motor to a 200 H. P. plant, we are prepared to meet your requirements with the best engine designed for your purpose.

Valuable Service for Engine Buyers

The Albert E. Eldredge Corporation offers unusual facilities to all marine engine buyers and motor boat owners in New York or the surrounding territory. These facilities constitute a service to the buyer which must be considered as a worth-while addition to the quality of the engines we sell. Proper co-operation with the owner by the retail distributor is an important factor in producing that complete satisfaction which should result from the purchase of a high-grade power plant. With this in view we have developed the service idea to a high degree in connection with our selling work.

This company has the advantage of a long-standing reputation in the New York marine market. We stand back of every engine we sell, with a thoroughness that means continued satisfaction for the boat owner. Our experience in the engine field has been wide enough to give expert value to the advice we offer the buyer.

Our showrooms are most conveniently located, and designed to afford our patrons every assistance and convenience. A full line of engines is always on display. Motor boat owners are invited to inspect this permanent exhibit at their leisure and to talk over their service requirements with us.

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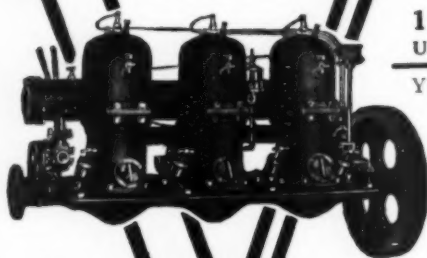
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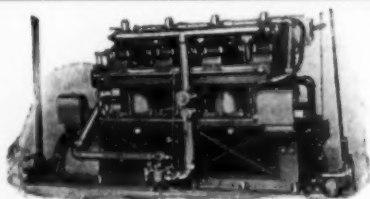
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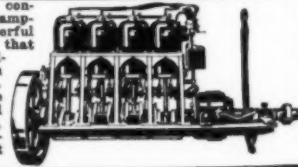
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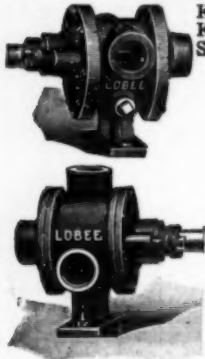
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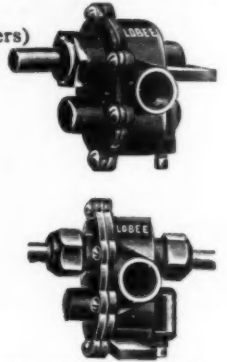
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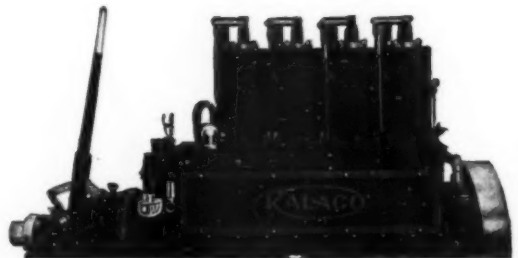
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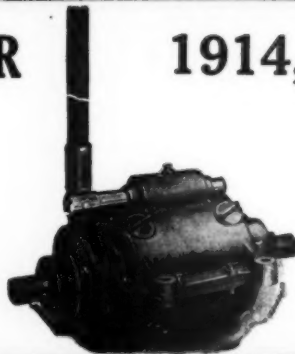
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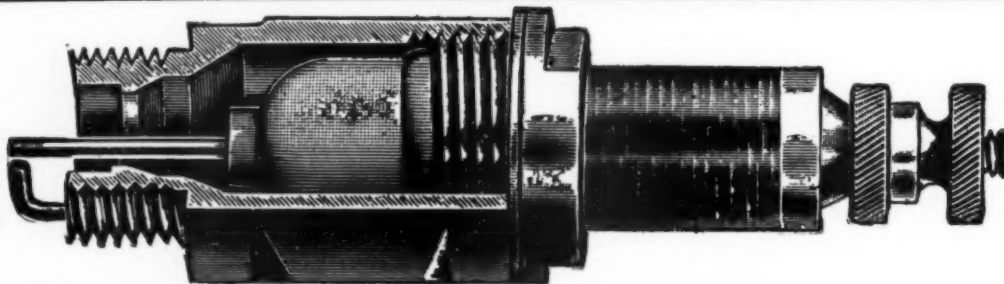
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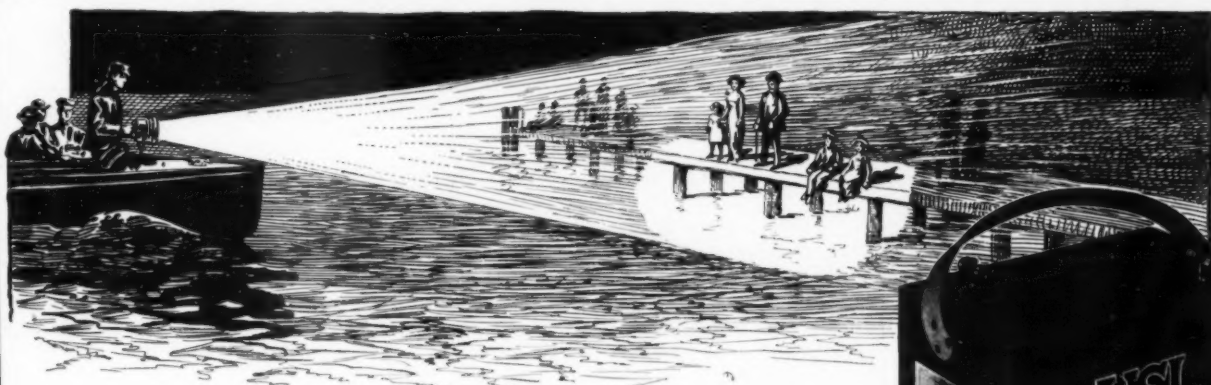
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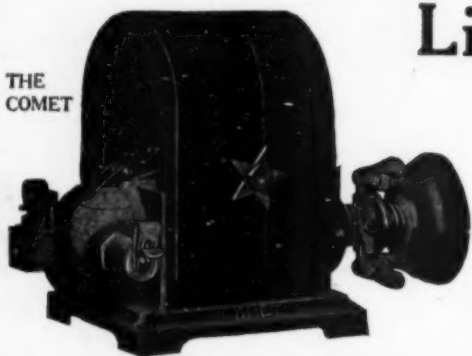
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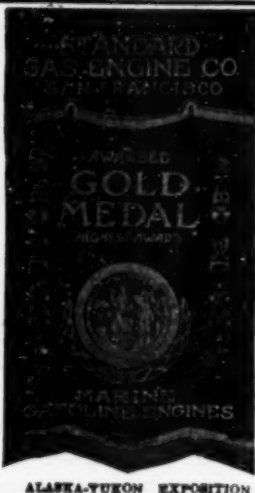
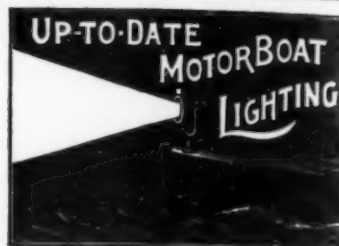


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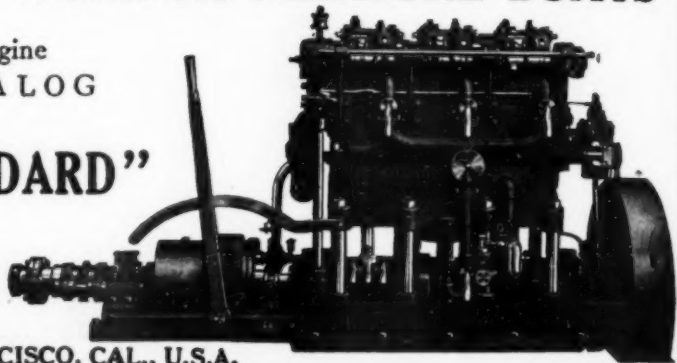
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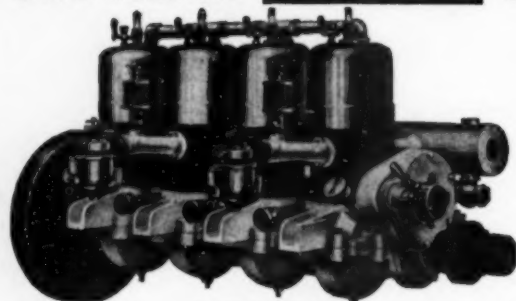
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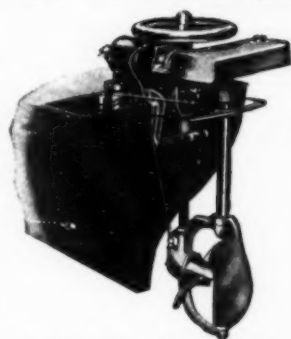
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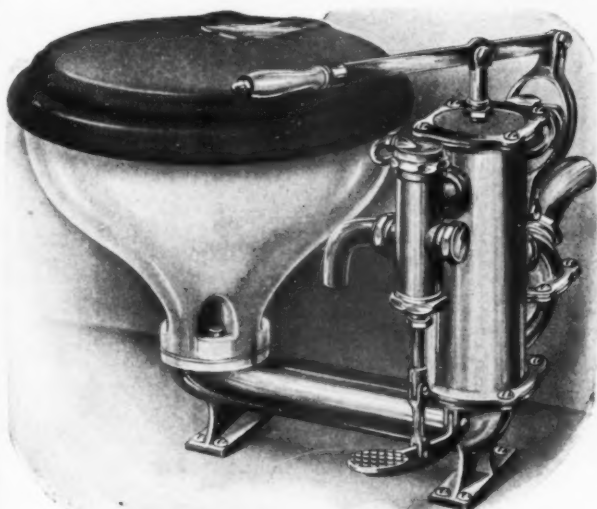
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"KNOCKABOUT" PLATE S-34. (Patented).

THE OLD "RELIABLE KNOCK-ABOUT" FOR OVER TWENTY YEARS THE STANDARD SMALL CLOSET OF THE WORLD. ESPECIALLY DESIGNED FOR LIMITED SPACE. USED IN OWNER'S, ALSO IN CREW'S QUARTERS FOR HEAVY DUTY. FITTED WITH "SANDS" AUTOMATIC SAFETY SUPPLY FOOT VALVE AND "SANDS" PATENT BACKWATER CHECK VALVE.

VITRO-ADAMANT ROUND FLUSHING RIM HOPPER BOWL, OAK OR MAHOGANY SEAT AND COVER WITH RUBBER BUMPERS AND HEAVY NICKEL PLATED BRASS POST HINGES.

PUMP ROUGH, FINISHED TRIMMINGS, OAK SEAT AND COVER...\$52.50
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PUMP POLISHED AND NICKEL PLATED ALL OVER...\$62.50
IF WITH MAHOGANY SEAT AND COVER, ADD...\$1.50

SPACE OCCUPIED, 17" x 10"

WEIGHT: NET, 42 LBS. SHIPPING, 52 LBS.



The "Bow" Closet fits the eyes of small boats

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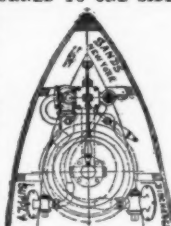


PLATE S-127.

The "Granby" Round Way Sea Cock for use on discharge pipe of closets and lavatories. This sea cock is similar to Plate S-126 except water way, which is full opening and clear round way, thus eliminating the possibility of paper or any foreign matter from clogging sea cock. Made in sizes as follows:

	Price
1 inch.....	\$4.00
1 1/4 ".....	5.50
1 1/2 ".....	7.00
2 ".....	11.00
2 1/2 ".....	16.00



PLATE S-2062.

The "Anglo" Composition Flanged Sea Valve, with straight couplings and locking plate, for use on the supply and discharge of small pump closets.

Price per pair with strainer for supply.....\$6.00



PLATE S-126

The "Glenora" Composition Flange and Coupling for use on supply and discharge pipe of closets, straight or bent coupling.

	PRICE
3/4 in.....	\$2.25
1 in.....	3.00
1 1/4 in.....	5.25
2 in.....	8.00
Composition raised strainers 25c extra.	



COMMERCIAL S-2070. (Copyrighted).

THE "COMMERCIAL" CLOSET IS SPECIALLY DESIGNED FOR WORK BOATS. USED ABOVE THE WATER LINE ONLY. IF IT IS PLACED NEAR THE WATER LINE WE WOULD SUGGEST THE USE OF OUR "KENO" AUTOMATIC BACK CHECK VALVE. THIS CLOSET IS STRONG, WELL MADE, AND DESIGNED FOR HEAVY DUTY. CONSISTS OF VITRO-ADAMANT FLUSHING RIM OVAL BOWL, GALVANIZED IRON VALVE BOX, MOUNTED ON GALVANIZED IRON BASE PLATE.

COMPOSITION QUICK OPENING SUPPLY FLUSH VALVE WITH COUPLING FOR I. P. CONNECTION.

GALVANIZED IRON OPERATING LEVER WITH COMPOSITION AXLE AND VALVE.

HEAVY OAK SEAT AND COVER WITH HEAVY CAST BRASS POST HINGES, METAL PARTS PAINTED WHITE, N. P. TRIMMINGS.....\$49.00

METAL PARTS PAINTED WHITE, N. P. TRIMMINGS, OAK SEAT WITHOUT COVER.....\$47.50

NET WEIGHT, 115 LBS. APPROXIMATE SHIPPING WEIGHT, 160 LBS. SPACE OCCUPIED, 21" x 17".



THE "WINNER" PLATE S-2061. (Copyrighted).

The "WINNER" Pump Water Closet for use above or below the water line, Vitro-Adamant flushing rim hopper bowl. Oak Seat with nickel plated brass post hinges. 2 1/2 inch Combination Supply and Discharge Pump. "Sands-Special" quick opening supply Valve and "Sands" patent back water check valve.

Plate S-2060 The "WINNER" Closet as described with oak seat.....\$19.00

Plate S-2061 The "WINNER" Closet as specified above with oak seat and cover.....20.00

Complete line of closets, lavatories, port lights, deck plates, basin and galley pumps described in Catalogue "R" sent upon request

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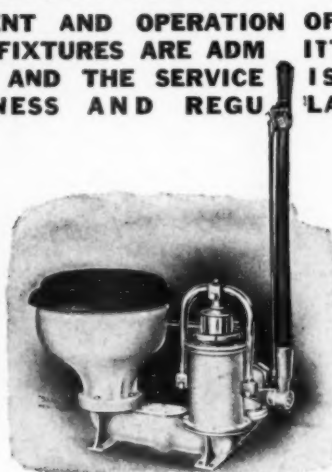
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"NATIONAL." PLATE S-2010.
(Patented—Copyrighted.)



"FLORIDA." PLATE S-2015.
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"HURON." PLATE S-2035.
(Patented—Copyrighted.)



"IOWA." PLATE S-2040.
(Patented—Copyrighted.)

THESE FOUR FIXTURES ARE SUITABLE FOR LARGE YACHTS AND ARE THE BEST EVER PRODUCED

FOR USE ABOVE OR BELOW WATER LINE



"MANOR." PLATE S-26.
(Patented—Copyrighted.)

- Plate S-2010 "National" Pump Closet,** Vitro Adamant Pedestal Bowl, 3" supply and waste pump. Price, pump white and nickel, mahogany woodwork **\$145.00**
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- Plate S-2035 "Huron" Pump Closet,** Vitro Adamant Hopper Bowl, 4" supply and waste pump. Price, pump white and nickel, mahogany woodwork **\$132.50**
- Plate S-2040 "Iowa" Pump Closet,** Vitro Adamant Hopper Bowl, 4" supply and waste pump. Price, pump rough, oak woodwork **\$85.00**

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PRICES REASONABLE, WORKMANSHIP "SANDS STANDARD."

- Plate S-26 "Manor" Pump Closet,** Vitro Adamant Pedestal Bowl, 4" supply and waste pump. Price, pump rough, oak woodwork **\$100.00**
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BOAT BUILDERS, OWNERS AND DESIGNERS PREFER THEM.
THERE ARE NONE MADE "JUST AS GOOD."

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SANITATION ON YOUR BOAT IS JUST AS IMPORTANT
AS IN YOUR HOME.

- Plate S-31A "Yukon" Pump Closet,** Vitro Adamant Pedestal Bowl, 2½" supply and waste pump. Price, pump rough, oak woodwork **\$55.00**
- Plate S-44 "Malta" Pump Closet,** Vitro Adamant Hopper Bowl, 2½" supply and waste pump. Price, pump rough, oak seat only **\$30.00**
- Plate S-45 "Lotus" Pump Closet,** Vitro Adamant Hopper Bowl, 2½" supply and waste pump. Price, pump rough **\$25.00**
- Plate S-39 "Utah" Pump Closet,** Vitro Adamant Pedestal Bowl, 2½" supply and waste pump. Price, pump rough, oak woodwork **\$45.00**

"SANDS PATENTED BACK WATER CHECK VALVE" PREVENTS FLOODING.
BE POPULAR AND INSIST ON A "SANDS FIXTURE."



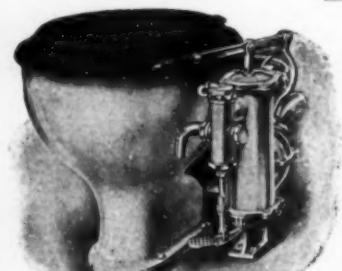
"ARBUTUS." Plate S-20.
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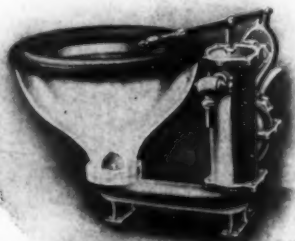
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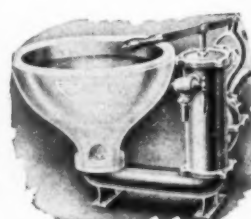
"IMPROVED MOHAWK."
PLATE S-2030.
(Patented—Copyrighted.)



"YUKON." PLATE S-31A
(Patented—Copyrighted.)



"MALTA." PLATE S-44.
(Patented—Copyrighted.)



"LOTUS." PLATE S-45.
(Patented—Copyrighted.)



"UTAH." PLATE S-39.
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Complete line of closets, lavatories, port lights, deck plates, basin and galley pumps described in Catalogue "R" sent upon request

A. B. SANDS & SON COMPANY

Largest Manufacturers in the World MARINE PLUMBING SPECIALTIES 22-24 Vesey St., New York, U. S. A.
1849 — "SIXTY-FOUR YEARS OF QUALITY" — 1913

THE RECOGNIZED STANDARD OF THE WORLD

LARGE ASSORTMENT OF STATIONARY AND FOLDING LAVATORIES SUITABLE FOR ALL CLASSES OF VESSELS



PLATE S-152.

The "Croton" Folding Lavatory with Vitro-Adamant roll rim tipped oval basin, N. P. copper lining, soap and brush holders, N. P. brass self-closing supply faucet, N. P. brass towel rack, N. P. brass supply and waste couplings, N. P. brass trimmings.

Polished quartered oak.....\$37.50
Polished mahogany 39.00



PLATE S-3025.

The "Alpine" Folding Lavatory, consisting of Vitro-Adamant oval basin, with splash rim, Vitro-Adamant soap dishes, metal lining white enameled, nickel plated self-closing faucet, nickel plated brass supply and waste couplings, nickel plated brass trimmings.

Complete as shown and described, with oak woodwork, or birch imitation mahogany finish\$37.50
Dimensions: Height, 20 in.; width, 18 in.; depth closed, 8 1/2 in.; depth open, 22 in. Can be fitted with combination self-closing double faucet for hot and cold water, add.....\$5.00

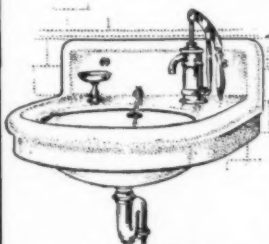


PLATE S-3068B.

The "Majestic" Vitro-Adamant Lavatory in one piece, N. P. double acting brass pump, N. P. brass full "S" trap, with waste pipe to deck. White enameled bulkhead brackets.

Price\$35.00

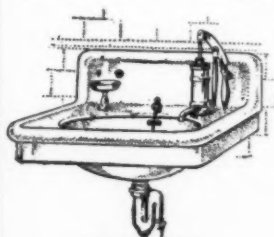


PLATE S-3078.

The "Majestic" Vitro-Adamant Lavatory in one piece, N. P. double acting brass pump, N. P. brass full "S" trap, with waste pipe to deck. White enameled bulkhead brackets.

Price\$35.00



PLATE S-186.

The "Arco" Folding Lavatory, N. P. copper combined round basin and slab, N. P. composition single-acting pump, combination swing supply faucet, N. P. copper lining waste and supply couplings, oak case.

Complete\$35.00
Height over all, 19 1/2 inches; width, 15 inches; depth closed, 5 1/2 inches; depth open, 16 1/2 inches; basin, 10 inches.

The basin and slab are made of one piece of copper, dispensing with all seams and preventing the collection of dirt.



PLATE S-3077.

The "Jefferson" stateroom lavatory, Vitro-Adamant reservoir with N. P. brass self-closing supply faucet, Vitro-Adamant basin with enameled inside waste receiver, with brass waste cock.

Price\$25.50
Plain glass-ware and N. P. holders, extra\$5.00



PLATE S-3056.

The "Alcona" Folding Lavatory, adjustable beveled plate glass mirror; glassware rack; zinc reservoir and waste receiver; zinc lined painted white enamel; Vitro-Adamant large basin with splash rim; china soap holders; nickel-plated brass self-closing supply faucet; nickel-plated brass trimmings.

Pol. Quartered Oak.....\$52.50
Polished Mahogany..... 60.00
Copper Reservoir and Waste Receiver, add 5.00

Cut Glass Carafe and Cut Glass Tumbler.. 4.00

Dimensions: Height, 60" over all; width, 20" over all; depth, when closed, 8"; depth, when open, 22"; capacity of tank, 5 gall. s

This fixture is highly polished and well made. Stands on floor of stateroom; is fitted with a space for shoes or toilet articles.



PLATE S-151.

The "Boelyn" Folding Lavatory, with tumbler rack; N. P. copper lining; N. P. copper combined round basin and slab; N. P. copper soap and brush holders; N. P. brass double-acting pump with combination brass swing supply faucet.

Made in Two Sizes
Quartered oak, polished finish.....\$37.50 No. 1 No. 2
Mahogany, polished finish..... 42.50
Height 19 1/2" 22"
Width 15 1/2" 17"
Depth, open 16 1/2" 19"
Diameter of basin 10" 12"



PLATE S-150.

The "Glenwood" Folding Lavatory, with Vitro-Adamant roll rim tipped oval basin, N. P. copper lining, soap and brush holders, N. P. brass double-acting pump with combination swing supply faucet, N. P. brass towel rack, N. P. brass supply and waste couplings, N. P. brass trimmings.

Quartered oak, polished finish.....\$42.50
Mahogany, polished finish, add..... 1.50



PLATE S-3072.

The "Jain" all Vitro-Adamant stateroom lavatory outfit, with waste jar, and N. P. waste cock. Supply pitcher with N. P. ring and catch. Price, complete as shown and described.....\$26.00
The above lavatory is very pleasing in appearance and thoroughly sanitary. The basin measures 17" across the back and 17" front to back.

PLATE S-3056.



PLATE S-3150.

The "Menard" 14" Vitro-Adamant lavatory, one N. P. compression faucet, waste plug and brass trap, chain, stay and rubber stopper.....\$11.00



PLATE S-151 (Design patent).

The "Sunset" Vitro-Adamant Ship Lavatory, detachable oval basin, with back outlet, chain stay, chain and rubber stopper; Vitro-Adamant reservoir, with combined soap dish and filler cup; self-closing push button supply faucet; Vitro-Adamant waste receiver, with large brass cleanout at bottom, and N. P. brass lock waste cock with detachable key; furnished for complete installation.

Price\$45.00



PLATE S-3150.

The "Menard" 14" Vitro-Adamant lavatory, one N. P. compression faucet, waste plug, chain, stay and rubber stopper, with N. P. trap.....\$9.75



PLATE S-3196.

The "Macon" 12-inch Vitro-Adamant Corner Lavatory with one N. P. Compression Faucet, N. P. Waste Plug, Chain, Cock Hole, Chain Stay and Rubber Stopper, No Trap.

Complete as described.....\$7.75

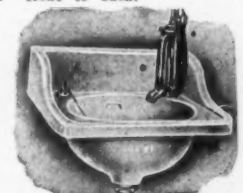


PLATE S-3183.

The "Manatee" 14-inch Vitro-Adamant Flat Back Lavatory with N. P. Basin Pump with Low Down Spout, N. P. Waste Plug, Chain, Rubber Stopper and Cock Hole Chain Stay. No Trap.

Price\$18.50

Full Line of Ventilators, Bath Tubs, Showers, Basins, Sinks, Gasoline and Bilge Pumps Shown in Catalog "R" Free Upon Request

A. B. SANDS & SON COMPANY

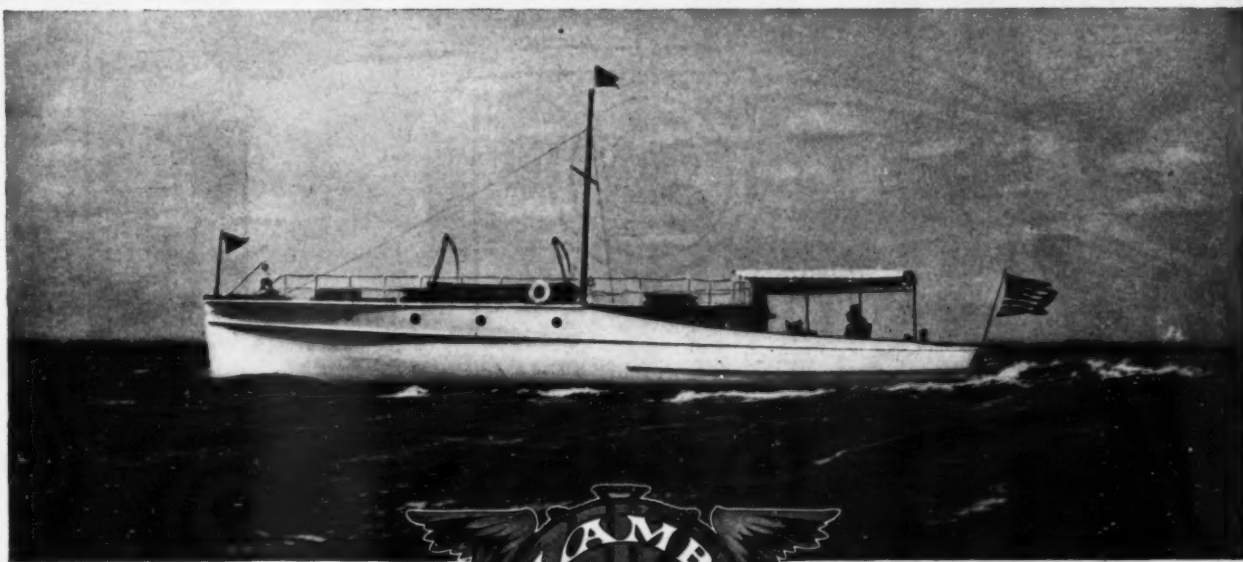
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1849—"SIXTY-FOUR YEARS OF QUALITY"—1913

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"WEEPOOSE"
A 60 ft. Cruiser designed by Whitaker for Mr. Chas. S. Thorne of New York City. Powered with a 60 H. P. Lamb Engine. Speed 12 miles.

A Dependable Engine for Every Purpose

Lamb Engines have been an important factor in the marine gasoline field since the year 1900, and each succeeding year has witnessed a steady growth in the demand for this engine by conservative buyers. No matter what your requirements may be, we have a Lamb engine in one of the different models which will be particularly adaptable to your purpose, whether it be for a small runabout or a heavy cruiser, whether for work or pleasure. All models are of the four-cycle type, carried to the highest degree of development.

"LAMBKIN"

4 Cylinder	3 1/4" x 5 1/2"	900 to 1200 R.P.M.	25-35 H.P.	\$510.00
6 Cylinder	3 1/4" x 5 1/2"	900 to 1200 R.P.M.	40-60 H.P.	784.00

RIMODEL, MEDIUM DUTY

2 Cylinder	5 1/4" x 8"	500 to 700 R.P.M.	12 H.P.	400.00
4 Cylinder	5 1/4" x 8"	500 to 700 R.P.M.	24 H.P.	760.00
6 Cylinder	5 1/4" x 8"	500 to 700 R.P.M.	40 H.P.	1050.00

H MODEL, HEAVY DUTY

4 Cylinder	6 1/4" x 7"	400 to 500 R.P.M.	40 H.P.	1170.00
6 Cylinder	6 1/4" x 7"	400 to 500 R.P.M.	60 H.P.	1585.00

F SPECIAL MODEL

4 Cylinder	4 1/4" x 6 1/2"	800 to 1000 R.P.M.	40-50 H.P.	\$915.00
6 Cylinder	4 1/4" x 6 1/2"	800 to 1000 R.P.M.	60-75 H.P.	1190.00

F MODEL, MEDIUM HEAVY DUTY

2 Cylinder	4 1/4" x 6 1/2"	450 to 600 R.P.M.	15 H.P.	450.00
4 Cylinder	4 1/4" x 6 1/2"	450 to 600 R.P.M.	30 H.P.	812.00
6 Cylinder	4 1/4" x 6 1/2"	450 to 600 R.P.M.	45 H.P.	1065.00

G MODEL, SPECIAL HEAVY DUTY. Air Starting and Reversing

4 Cylinder	8" x 12"	350 to 400 R.P.M.	100 H.P.	\$1900.00
6 Cylinder	8" x 12"	350 to 400 R.P.M.	150 H.P.	5000.00

The prices quoted above are net—not subject to discount.

Exceptional Shipping Facilities

The Lamb factory is centrally located on all the western trunk lines at Clinton, Iowa.

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C. & N. W. AND UNION PACIFIC

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A complete stock of motors and parts is carried in our warehouse at Jersey City, N. J., with offices in the Hudson Terminal Bldg., New York.

Mail the attached coupon and receive our handsome 1914 catalog.

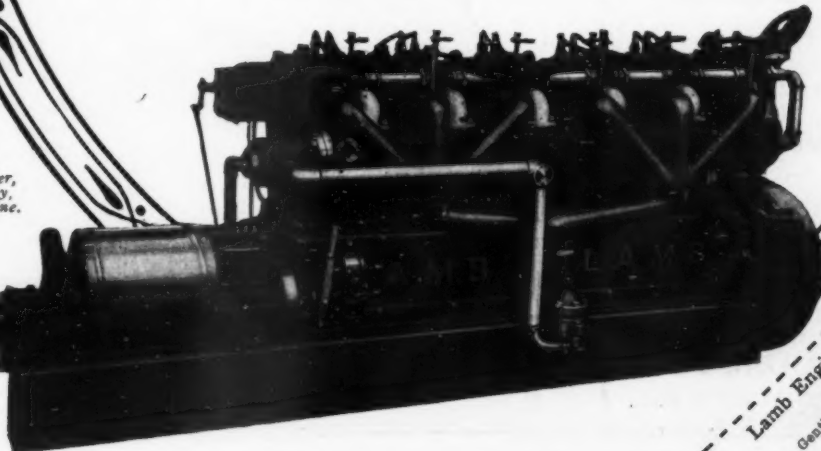
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Factory and General Office, Clinton, Iowa, U. S. A.

Lamb Engine Co. of N. Y., Hudson Terminal Bldg., 30 Church St., New York City.

Distributors to the Atlantic Coast States and Eastern Canadian Agencies.

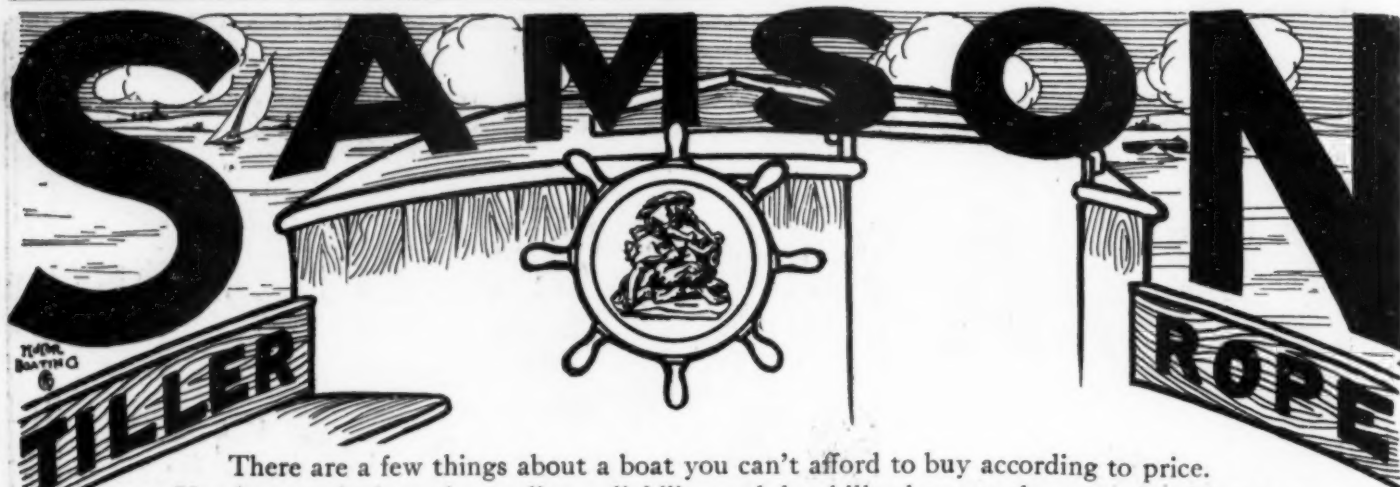
60 H. P.
Six Cylinder,
Heavy Duty,
Lamb Engine.



Gentlemen—Please send me at once a free copy of your 1914 catalog and special information about the
Type of boat.....
Beam.....
Name.....
Address.....
City.....
Draft.....
Length.....
Model.....
Speed desired.....H.P.

Lamb Engine Co., Inc., Clinton, Iowa, U. S. A., 30 Church St., N. Y. City.
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There are a few things about a boat you can't afford to buy according to price. You have to look to the quality, reliability and durability because these are the things upon which you risk your boat, your pleasure, your safety and even your life. One of the most important of these is the tiller rope. Be sure that yours is the "SAMSON" Brand and you need never worry about this part of your equipment. The difference in first cost is only a few cents per boat.

Samson Quality Is Economy and Safety Insurance

Samson Tiller Rope is a waterproofed mahogany-colored cotton cord, braided over flexible phosphor bronze or galvanized crucible steel wire cable. It has a smooth hard finish that won't roughen up or wear out quickly. It won't shrink and bind or stretch and get loose. Flexible enough to run easily over the pulleys without breaking.

We recommend the bronze center rope for salt water use. Sizes in both styles; $\frac{1}{4}$ ", $\frac{5}{16}$ ", $\frac{3}{8}$ ". Other sizes and colors made to order. We use only extra quality materials, carefully inspected and guaranteed.

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ROBERTS

The Motors That Never Backfire



"SWEET 16" — 4-P 40 H. P. 36.73 M. P. H.

THE motor in "Sweet 16" is 5 years old, and has been in use every season. Champion of Puget Sound, she is the fastest boat for her power in the world. We make twelve sizes of motors, from 3 to 125 horsepower, for boats of all kinds. We build the lightest marine motors made for their power.

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THE ROBERTS MOTOR COMPANY
1501 COLUMBUS AVENUE, SANDUSKY, O., U. S. A.

WICKER-KRAFT

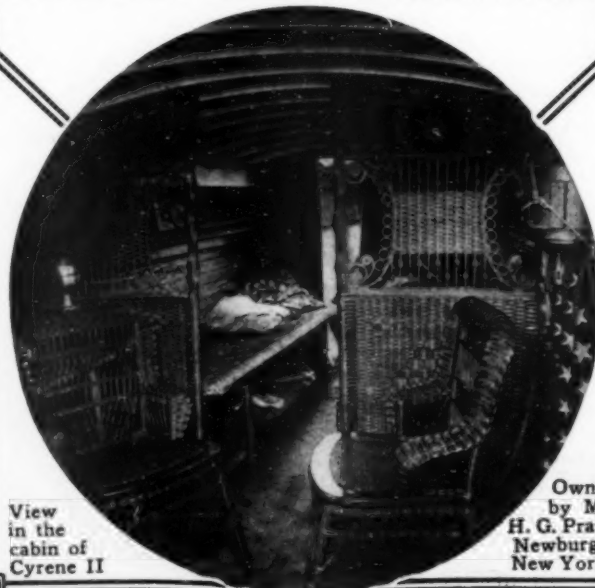
Furniture for Yachts, Launches, Canoes

Handsome in appearance, light in weight and exceedingly comfortable, Wicker-Kraft furniture is rapidly being accepted as the indispensable equipment for all sizes of motor boats and yachts. The finest line of wicker yacht furniture made—waterproof, durable, finely made and comparatively inexpensive.

The Wicker-Kraft Life Preserver Chair is fitted with a life belt and has become very popular with yachtsmen during the past season.

Write today for complete catalog.

WICKER-KRAFT COMPANY, 15 SOUTH WATER STREET
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View
in the
cabin of
Cyrene II

Owned
by Mr.
H. G. Pratt,
Newburgh,
New York.

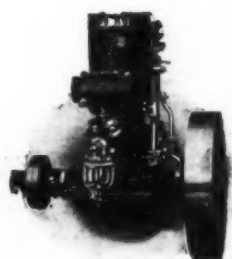
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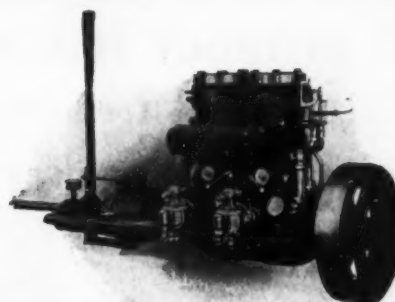
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SIXTEENTH YEAR



5-H. P. MIANUS—1914 Model

**GASOLINE
KEROSENE
FUEL OIL
GAS OIL**



15-H. P. MIANUS—1914 Model

SPECIFICATIONS

H.P.	Number of Cylinders	Cycle	Ignition	Port	Bore	Stroke	R. P. M.	Diameter Crank and Crank Pin	Weight
3	1	2	m.&b.&j.s.	2 or 3	4"	4	550	1 1/4"	175
5	1	2	"	"	4 5/8"	5	500	1 3/4"	280
7 1/2	1	2	"	"	5 1/8"	6	450	2"	415
10	1	2	"	"	6 1/8"	7	375	2 1/8"	675
6	2	2	"	"	4"	4	550	1 1/4"	300
10	2	2	"	"	4 5/8"	5	500	1 3/4"	500
15	2	2	"	"	5 1/8"	6	450	2"	750
20	2	2	"	"	6 1/8"	7	375	2 1/8"	1170
30	3	2	"	"	6 1/2"	7	375	2 7/16"	2000
6	1	2	j. s. only	"	4 5/8"	5	800	1 3/4"	270
12	2	2	"	"	4 5/8"	5	800	1 3/4"	385

Built according to recent United States Government specifications, and are used in nearly all of the Government Departments.

Bulletin 22 gives full specifications for the 1914 MIANUS. Sent free.

NICKEL finish.
DROP-FORGED cranks
and connecting rods.

FAHRIG METAL connecting rod bearings.
IRIDIUM spark points.
Large bearing surface.

Springs of **IMPORTED WIRE.**
FLANGE COUPLINGS.

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The State Laws Require a Muffler

that will silence your motor, and
the STATE POLICE ARE
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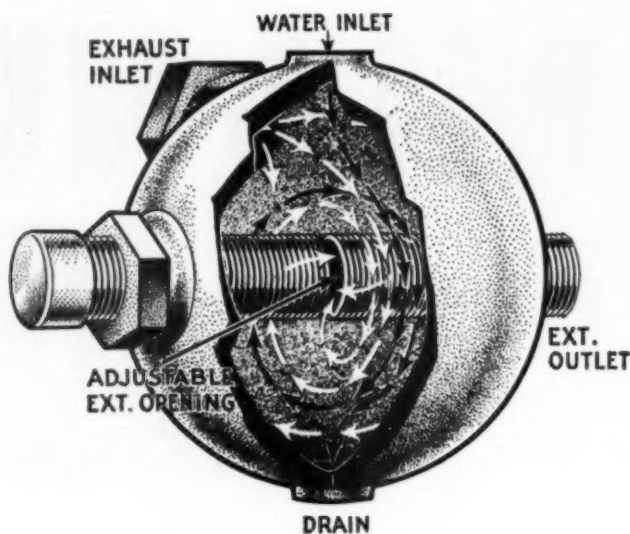
The Improved Thermex Muffler

if properly installed will not only silence
your motor but will pass the law as well
without loss of power and

[WITHOUT FIRE RISK]

Our Guarantee is behind the Improved Thermex.

It can not clog with soot or salt.



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Bruce Stewart & Co.
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Burrard Iron Works
Vancouver, B. C.

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of Motor Boating goes to press with 67,662 agate lines of advertising, which is a gain of 10,206 agate lines over the December, 1912, issue. This showing indicates the healthy condition of the marine industry and of its leading publication—Motor Boating.

Motor Boating has the largest guaranteed reader-reaching circulation in the marine field. It thoroughly covers the trade, manufacturers, dealers and thousands of boat owners. We guarantee in excess of 25,000 copies per issue and will make *pro rata rebate* in advertising rates if the circulation ever falls below that figure.

That it is a result-producing circulation is proven by the growth in advertising volume, which in turn is based upon the results manufacturers receive from their advertisements. Motor Boating's readers are the kind who have the money to buy what they want. Make them *want* your product and they will buy it.

The Economy of a Monthly Journal

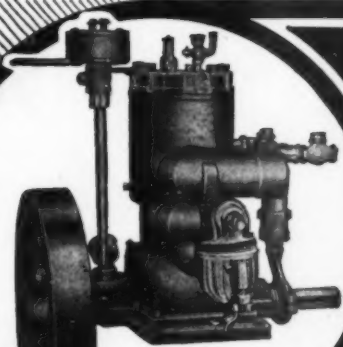
Motor Boating gives a full year's advertising in twelve insertions. Your advertisement in each issue lives a full thirty days. The economy of a monthly over publications of more frequent issues is beyond question. Besides accomplishing the full quota with half as many issues, each number of Motor Boating serves as a buying guide. Readers preserve it several months for reference purposes.

January Motor Boating covers the Southern trade at buying season and is also valuable for advance publicity before the big shows of the season

J. S. HILDRETH
Advertising Manager

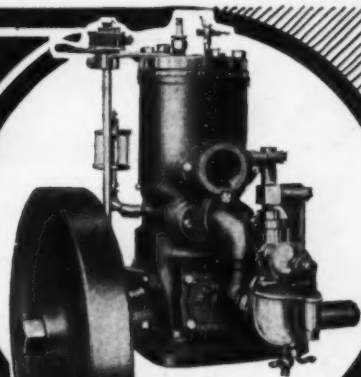
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BOATING**

119 WEST 40th STREET
NEW YORK CITY



Wonder 5 h.p.

WONDER TWO-CYCLE ENGINES

Wonder 6 h.p.
heavy duty.

Do You Know Engine Quality When You See It?

Take a close look at the Wonder line of two-cycle marine engines. Look up their record and study their construction. Ask anybody you know who has a Wonder engine, what he thinks of it. If none of your friends happen to have a Wonder, we can put you in touch with scores of satisfied owners who will be glad to tell you what kind of service they get. Then you'll know why we can afford to *guarantee it for five years*.

If you want a little 3 H. P. engine for a launch or motor boat, or perhaps a larger engine for racing, or a big, heavy duty motor for a cruiser or working boat, you'll find the Wonder offers the most power, the most service, the most satisfaction, for the least money and least expense.

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For speed, power, reliability
and economy, you want
a Wonder Engine.



This picture shows the 30 ft. displacement speed boat "Wonder" equipped with a 3-cylinder 15 h.p. Wonder engine, winning a race at St. Andrews Bay, Fla., last Fourth of July at an average speed of nearly 25 miles per hour. The reliability of its engine permitted this boat to win two races the same day, running against a boat of more than four times its rated power.

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The Wonder line is one with which every live dealer can make good money. It isn't prohibitive or even high in price, it is the price and type in the greatest popular demand, and it is good enough to meet any selling competition you have in your territory. On top of all this we have an easy payment plan which is the greatest sales builder ever tried. Don't take on any line for 1914 until you know all about the Wonder proposition.

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- 10 H. P. Heavy Duty—Outfit B, \$165.00 complete.

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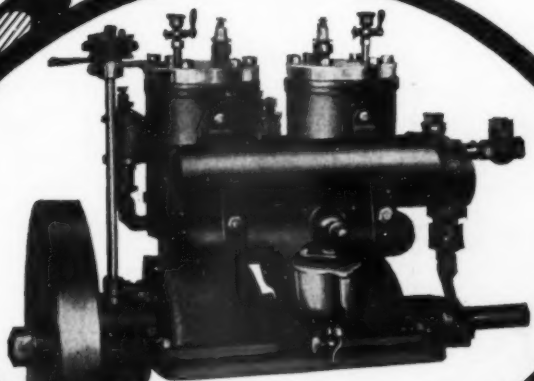
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- 6 H. P.—Outfit B, \$130.00 complete.
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- 12 H. P.—Outfit B, \$260.00 complete.
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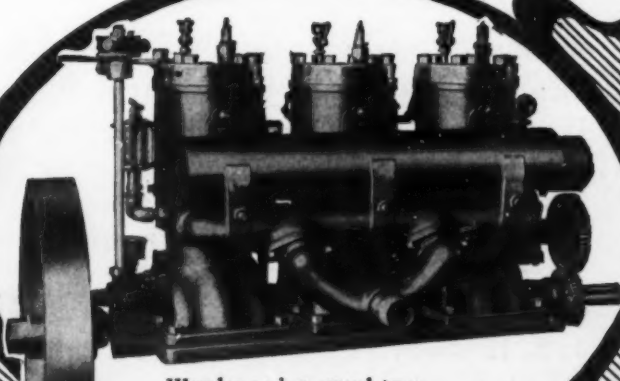
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Wonder 10 h.p. speed type.



Wonder 15 h.p. speed type.

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 Rowboat motors, electric lighting outfits, search lights, toilets, mufflers, magnetos, etc.
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TORONTO—February 21st to 28th

CHICAGO—February 28th to March 7th

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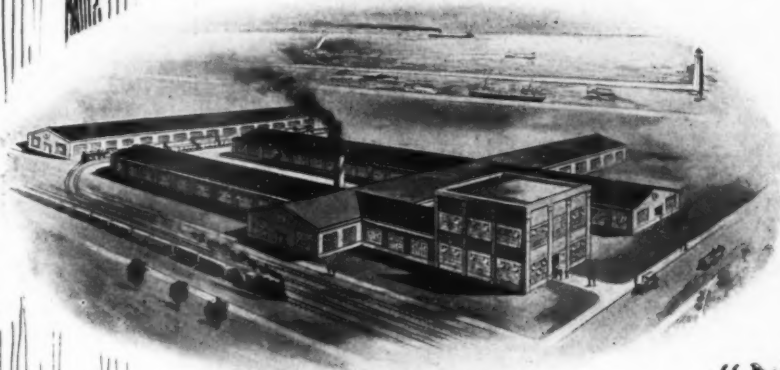
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 BOATING**

119 West 40th St.
 New York

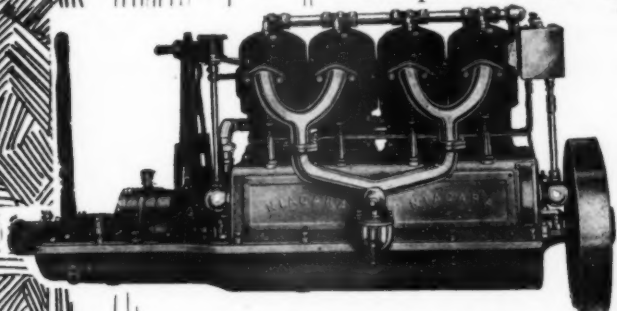
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in Your BOAT



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"NIAGARA" Is Your
Insurance Policy On Complete Motor Satisfaction

When you buy a marine motor, take out an insurance policy on complete motor satisfaction by selecting a Niagara Motor. It costs no more, to be sure; in fact, it costs considerably less to get the right motor in the first place than to buy expensive experience the first time and satisfaction the second time.

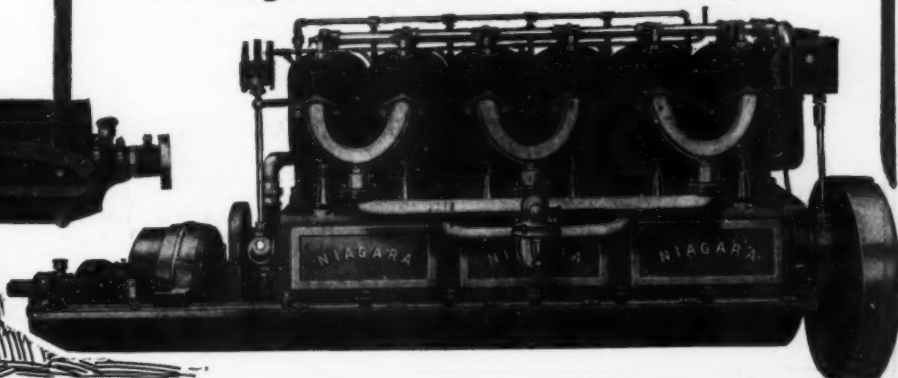
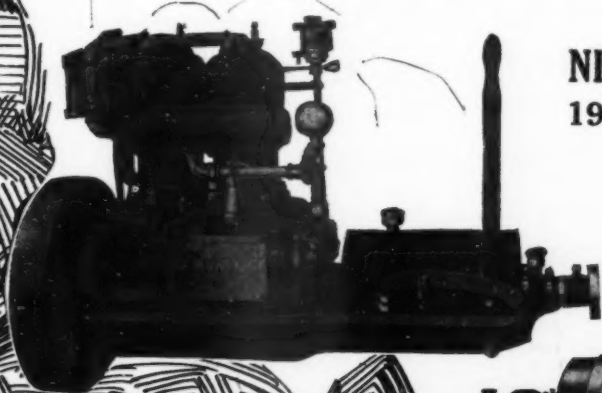


Mr. W. T. Taylor, Importer of Romeo & Juliet cigars, 93 Broad St., New York, voluntarily sends us the following endorsement of the NIAGARA:—"Pardon my not having written you long since of how well pleased I am with the 25 h.p. engine you shipped me in June. Must say it is all you claimed for it, and more, and has been highly praised by all the engineers and mechanics who have seen it. You can count on me to recommend your product wherever and whenever I have an opportunity. My first experience was bringing my cruiser from Gloucester, Mass., to Sag Harbor, N. Y., RUNNING THE ENGINE 11 HOURS A DAY FOR THREE DAYS WITHOUT A SKIP."

All Niagara Motors are of the highest grade four-cycle type, built in sixteen sizes of 2, 4 and 6 cylinders, from 5 to 100 H. P. No matter what size or type of boat you own, you should have a Niagara Motor if you want Economy, Flexibility, Quietness, Accessibility and Reliability.

*Let us send you our free catalog and Book of Evidence.
 Write for them today.*

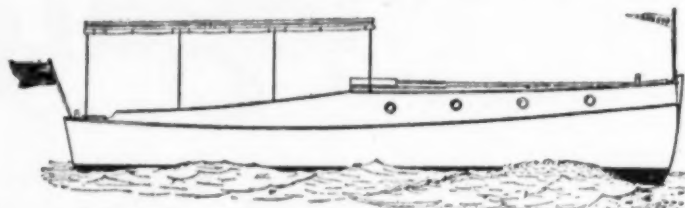
NIAGARA MOTORS & MFG. CO., INC.
 194 Niagara Boulevard Dunkirk, N. Y.



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Here Is What Is Wanted By Many

A SMALL, SAFE CRUISER, Gurney design, with toilet, sink, oil stove, ice box, sleeping accommodations, running fresh water, tool, dish and clothes lockers, large cockpit.



28 ft. Cabin Cruiser

U. S. Volunteer Life Saving Dories, 16 ft. Lake and River boat, shallow draft Rowing skiffs, 10, 12, and 14 ft. Fourteen-foot size especially adapted for outboard motors.

100 cents worth of boat for every dollar invested.



Our leader 20 ft. special power dory, the safest little family boat built. Will stand the ocean waters.

Built
by

CAPE COD POWER DORY CO.

455 MAIN STREET
WAREHAM, MASS.

The "**Oregon Kid**" with a record of over **50 miles per hour** won the races at Astoria, Oregon, with a 19x36 Hyde Propeller.

THERE ARE THOUSANDS OF PROOFS THAT
HYDE TURBINE TYPE PROPELLERS
are superior to all others for Motor Boats of all Classes.

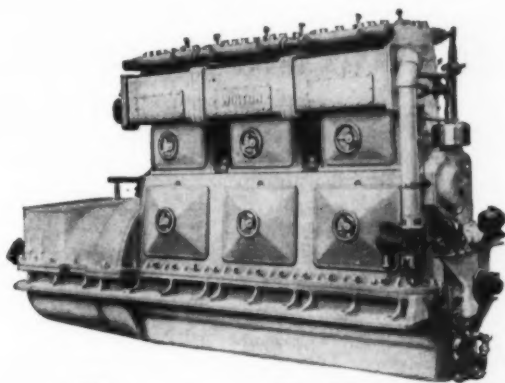


The Irish Pneumatic Clutch Control, the latest and best method of controlling the motor from the steering station, using air from the whistle tank.



Manufactured by

HYDE WINDLASS CO. Bath, Me., U.S.A.



Nothing Succeeds Like Success

We have succeeded in producing a marine engine without an equal—without a rival capable of just comparison. This is a fact which allows no argument.

We have been successful in convincing the Trade (Boat Builders, Naval Architects, Dealers, and even other Engine Builders) that

WINTON MARINE ENGINES

have set the pace by which all other large engines are judged.

We have gone even further with our success. The ultimate consumer, the boat owner, has expressed his approval of our product, and acknowledges its superiority by actually buying WINTON ENGINES in preference to engines of excellent and long-established reputations.

This is the acid test of success, which all emanates from our own success in producing an engine worthy of such endorsements.

A descriptive catalog will be sent upon request

SIZES

6½ x 9 — 6 cylinder — 60-75 H. P.
8 x 11 — 6 cylinder — 100-125 H. P.
9 x 14 — 6 cylinder — 150-200 H. P.

WINTON LIGHTING SET

Six Cylinder 3 x 4 T-head Motor —
Crocker-Wheeler 5 K. W. Generator.

The Winton Gas Engine & Mfg. Co.

2116 West 106th St.
Cleveland, Ohio

How Fast?

YOU wouldn't think of running a steam boiler without a gauge, or an automobile without a speed indicator. For motor boats a reliable speedometer is even more valuable and indispensable. It quickly becomes one of the most useful and important parts of the boat's equipment. For racer, cruiser, work boat, runabout or any type of motor boat it is equally necessary.



The Sanborn Marine Speedometer

This is the first Mechanically Perfect marine speedometer. It is permanently accurate, reliable, durable and free from troubles. The principle and construction are so simple, it couldn't be otherwise. The movement of the boat forces water up through an inlet tube into the instrument, the pressure varying with the speed. A triangular cut-water protects the inlet tube from seaweed, grass and other floating material. A cleaning wire is also provided to keep the tube clear.

Shows You the Speed, Distance, Location, Tide and Current

When you know your exact speed you can easily calculate all of these things, which is a great satisfaction and wonderful help in navigation. In fog, at night, when cruising in strange water or following a chart, it eliminates guess-work and adds to safety.

To tune your boat up to the highest efficiency, the Sanborn speedometer shows the exact results of various adjustments of motor, carburetor, ignition, etc. Experiment with a new propeller, different oils, greases, fuel and accessories, change, your ballast, your spray hood or the tender in tow. You don't have to guess as to the improvement.

Hundreds in use. Write today for full information and prices.

American Steam Gauge & Valve Mfg. Co.

Boston, Mass.

New York, Chicago, Boston, Atlanta, Pittsburgh.

KINGSTON

CARBURETOR

THE New Model "Y" Kingston Will Increase the Efficiency of Your Boat

This is no ordinary marine carburetor—the new Kingston Model "Y." It is the latest design which we have just recently brought out, built especially to handle the low grades of gasoline you have to use now. It vaporizes this heavy fuel more readily, makes starting easier, running smoother, carbonizing less and fuel consumption lower.

Ordinary carburetors can give only ordinary results—on any motor, new or old. The Kingston gives extraordinary results because it is designed for the operating conditions of today—not for the fuels of several years ago.

Kingston Carburetors are particularly adapted for marine use, on account of two predominant features—the Floating Ball air valve and the Single Adjustment. The air supply is automatically controlled by four bronze balls which are lifted from the valve seats by the suction of the motor, admitting exactly the amount of air required for every variation of conditions. This control needs no adjusting. It cannot be tampered with and cannot get out of adjustment for age, as springs and similar devices do. The only adjustment is the gasoline needle valve.

Satisfaction Guaranteed

We take all the risk of proving that the Kingston will give superior results on your motor. The surest proof is a trial on your own motor, at your leisure, and under actual operating conditions to be met. So we offer you

30 Days' Trial Free

Write today for Full Information, Free Trial Offer and Guarantee.

BYRNE-KINGSTON & CO., Kokomo, Indiana

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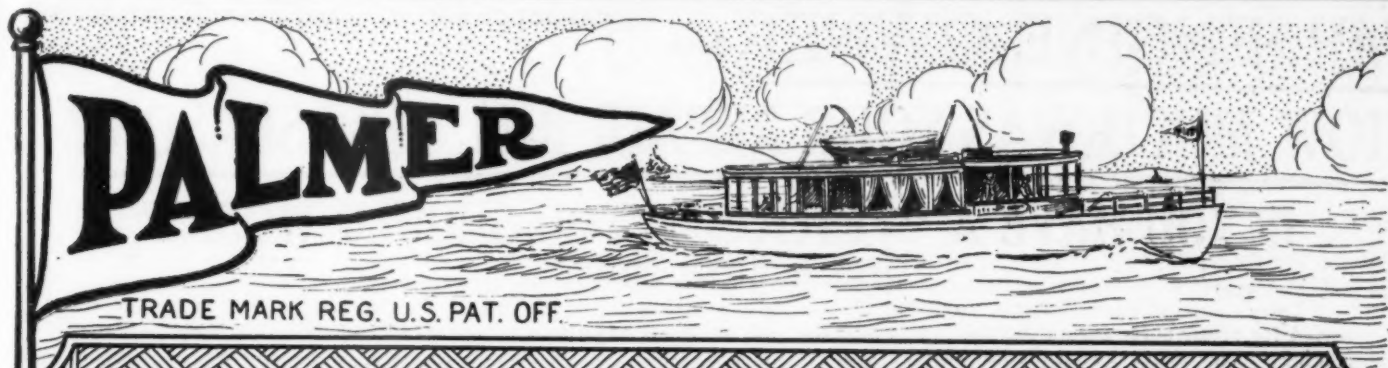
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HORIZONTAL TYPE



PHANTOM
VIEW



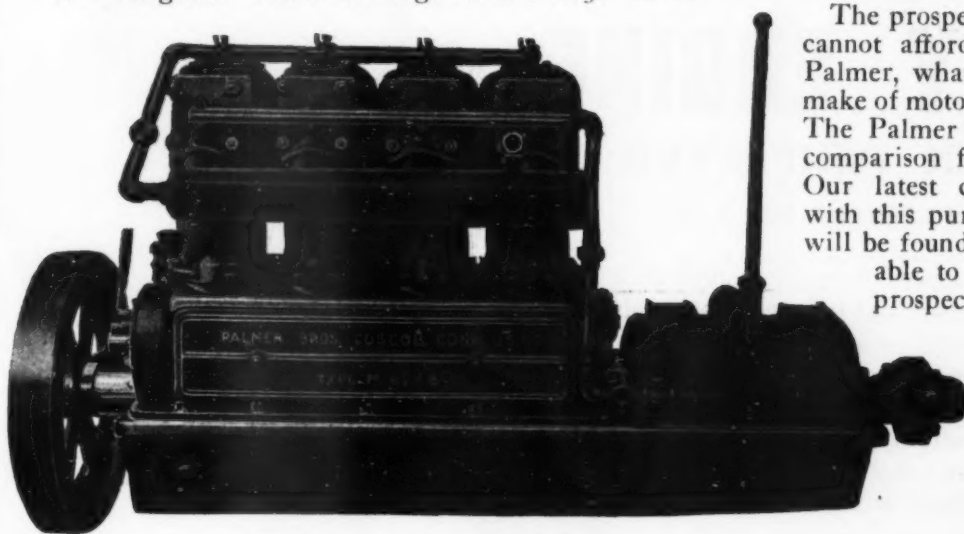
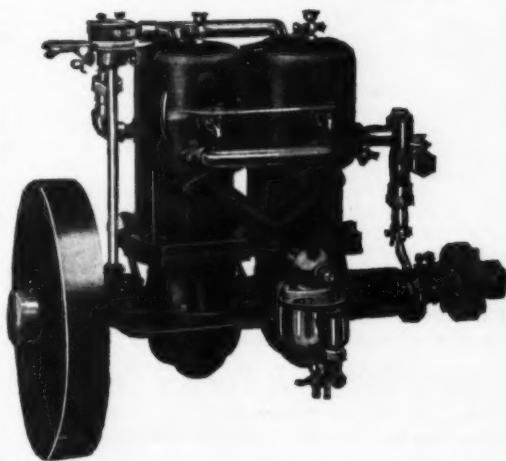
The Highest Development of the Marine Motor

Two-Cycle Four-Cycle

PALMER MOTORS have always led in quality, in originality and refinement of design, in perfection of workmanship and materials, and in the natural results of these facts—superior operation in all branches of marine service. Many accepted principles in motor design and operation were originally introduced by Palmer Brothers, and their product still leads in many features.

The highest development ever attained in any marine engine must be conceded to the present Palmer Motors. They were the first to reach the degree of refinement of the modern automobile engine, and this refinement is followed throughout every model and type made.

The 1914 Palmer line will include the three types—two-cycle two-port motors, two-cycle three-port motors and four-cycle motors. Each of these types has its use, and as we build a complete line, we are able to recommend and supply the most practical type for each purpose. We use make and break ignition for some models and jump spark for others, this being governed by the requirements of each particular model in the kind of service for which it is designed. The sizes range from 2 to 50 H. P.



32 Horse Power, Price \$1100

The prospective engine buyer cannot afford to overlook the Palmer, whatever size, type or make of motor he is considering. The Palmer affords a basis of comparison for judging others. Our latest catalog is written with this purpose in view, and will be found exceedingly valuable to every present and prospective engine owner, whether experienced or inexperienced.

Write today for a free copy of the Palmer catalog.

PALMER BROTHERS, Dept. M., Cos Cob, Conn.

New York—31 E. 21st St.
Philadelphia—54 N. 6th St.

BRANCH OFFICES:
Boston—77 Haverhill St.
Providence, R. I.—123 Dyer St.

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MR. ENGINE OWNER:—

HOW MUCH WAS YOUR REPAIR BILL THIS SEASON?

IF YOU HAVE A "FERRO" "YOU SHOULD WORRY"

HERE ARE THE FIGURES

Forty thousand Ferro Engines, valued at \$6,000,000, in use; \$25,216.40 amount the Ferro Machine & Foundry Co. received for repair parts during the last twelve months. Let us divide \$25,216.40 by 40,000 and see what the average Ferro Engine cost its owner during the last year:

40,000) \$25,216.40000 (\$0.63041

24,000.0
1,216.40
1,200.00
16.4000
16.0000
.40000
.40000

Average 63 Cents—"Can You Beat It"?

When you stop to think—over 4,000 of these engines have been in use seven years—5,500 six years—6,000 five years, with corresponding ratio to present date.

What Do These Figures Show?

Simply that a Ferro owner pays for his engine when he gets it. He does not pay a nominal figure at the time of purchase, then continue to contribute in way of repair bills as long as the engine is in operation.

What Does This Prove?

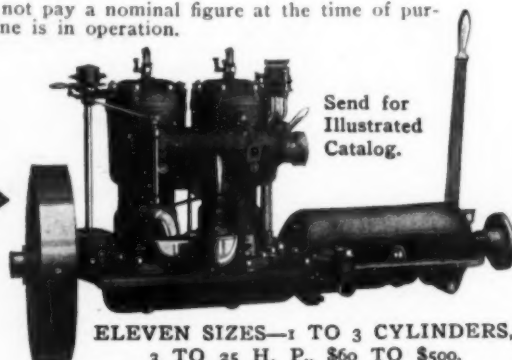
- 1—That quality is cheapest in the long run.
- 2—That it pays to consider first total cost and buy the best.
- 3—That Ferro Engine owners are not burdened with repair bills.
- 4—That you can depend upon your Ferro Engine to run and will not be tied up waiting for repairs.

THIS IS ONE OF THE FERRO ENGINES →

that has been run from one to seven years at an average repair expense of 63 cents per season.

The Ferro Machine & Foundry Co., Cleveland, Ohio, U. S. A.

Sales and Service Stations in every boating center in the world.
New York Distributor—The Gasoline Engine Equipment Co., 133 Liberty Street



Send for
Illustrated
Catalog.

ELEVEN SIZES—1 TO 3 CYLINDERS,
3 TO 25 H. P., \$60 TO \$500.

AT LAST THE ROTARY ENGINE HAS BEEN PERFECTED

ONE POUND IN WEIGHT PER H. P.

NO limit for speed (speed from 10 to 3000 R. P. M.)
only one rotating part and two automatic valves —
Nothing to get out of order — VIBRATIONLESS — No
use for a fly wheel — No power is lost — No fuel can pass
through without being utilized — NO DEAD CENTER
— Simplicity in construction will make the selling price

very low — Entirely fool proof and needs no attention after once starting — Self starting — Give it
the fuel, that's all — Runs on one-half the fuel of any other engine — Made in all sizes.



25 H. P., 10" HIGH, 4 1/2" THICK, WT., 25 LBS.

THE ENGINE WITH A HUNDRED LESS PARTS

ADDRESS ALL COMMUNICATIONS TO

FRANK J. HORTON

SOLE OWNER AND INVENTOR
335 CAMERON AVENUE, DETROIT, MICH.

FULL DESCRIPTION GLADLY FURNISHED. NO STOCK FOR SALE. WILL BE ABLE TO DELIVER THESE ENGINES SHORTLY

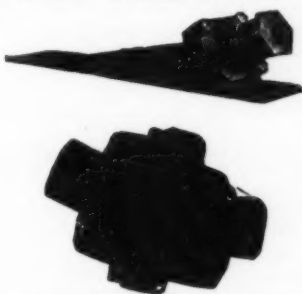
Mechanical Devices—Standard Equipment

A REAL INDEX TO GOOD BOATS

Time after time, in reading specifications of boats, we find the designer specifying Mechanical Devices; Mart advertisements frequently refer with evident pride to Mechanical Devices Co. equipment, and it helps the sale, because it indicates that intelligence and integrity were exercised in the boat construction and equipment.

Designers, boat builders, and some engine builders, unite in boosting our self-adjusting stuffing boxes, struts, couplings, etc., as standard equipment. It is all beneficial to the general industry by making motor boats safe, convenient and pleasurable.

STANDARD EQUIPMENT



A set of automatic aligning bearings are easy to install and that is the end of attention to that part of the boat.

A boat bends or twists in rough water or at speed. There is big pressure at the bow of displacement type; hydros lift out of water forward and the hull bends. The propeller shaft can't bend comfortably and unless these automatic aligning stuffing boxes, struts and couplings are there, the bearings quarrel with the shaft. One or both of them get hurt and you settle the dispute by new fittings. It takes some time for them to fight it out, and meantime they are using your power regardlessly—and gasoline isn't cheap anymore either. But put Mechanical Devices fittings there,—they won't fight the shaft and there will be peace and harmony.

Send us your dope when figuring on a new propeller. We can supply you speed, work and weedless wheels. We won't promise indiscriminate guarantees to increase your speed—but will give every application individual attention and advise you promptly.

Every wheel will be guaranteed true to pitch, and if we bore it, it will be guaranteed in balance.



PATTERN PA

A Flexible Union

A Flexible Elbow Union

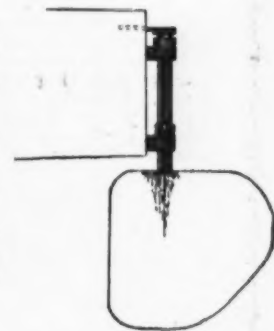
With these ball and socket pipe joints, irregular pipe lines are easily made. No pipe bending, no leaky joints and just the right amount of flexibility in the piping.



Auto steering wheels in various types—plain or grooved drum, chain and sprocket, rack and pinion. Plain rims or corrugated. Brass polished finish or nickel plated.

Nickel plated fittings are quite popular as they keep better than polished brass. No boat is complete without auto control wheel.

We make rudders for launches and speed boats only. The transom type here illustrated is a very popular style and particularly suited for fast boats. Finished for either single or double rudder system—and with arm or quadrant as preferred.



You can get good service here. Our location on the outskirts of Albany is within quick shipping distance of a large area and for shipments abroad. And all orders have personal attention to ensure accuracy and promptness.

SEND FOR 1914 CATALOG. It describes all these fittings, marine hardware, reverse gears, safety starters, tachometers, etc., for complete outfitting of boat.

MECHANICAL DEVICES CO., Inc.

WATERVLIET, N. Y.

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LAWLEY BOATS

The Highest Degree of Quality Ever Achieved in Boat Building

Lawley Boats have won a world-wide fame for quality and perfection in all details, large and small. They have gained a position which makes the words "Lawley Built" a term of superlative descriptive power in the marine world.

Lawley facilities are unequalled. We have the largest and best equipped plant of its kind in America. Modern methods and careful workmanship by experienced boat builders are responsible for Lawley quality. Every de-

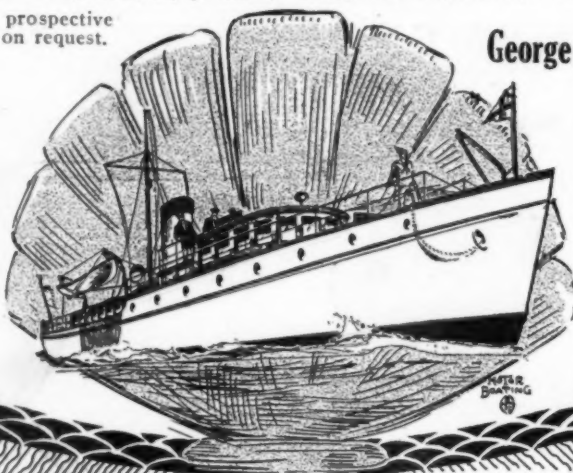
tail of construction is handled within our own works.

We build all types of boats from a ten-foot yacht tender to the largest auxiliary yachts. Wood, steel or composite construction.

For those wishing a power equipment we can guarantee as unreservedly as our boats, we build Lawley Heavy Duty Motors. Four cycle, two, four and six cylinder, 20, 40 and 60 horsepower respectively. Also steam.

Correspondence solicited from prospective boat buyers. Our catalog sent on request.

Motor Boats
Tenders
Cruisers
Auxiliaries
Engines



George Lawley & Son Corporation

Established 1866

NEPONSET, MASS.
U. S. A.

Cable Address,
"Lawley Boston."

Letters Like These Come to Our Office Every Day

"The motor I received from you last week is now installed in my boat. To-day is the first good try-out I have given it, going about seven or eight miles without a miss, and starting on the first pull over. I am very much pleased with engine and outfit and with my dealings with you, and think the whole outfit is O. K."

"ARTHUR C. SHIMEL,
"Frankford, Philadelphia, Pa."

"Just a few lines to say that I am very much pleased with the 6 H. P. motor that I purchased from you this spring. It is certainly running fine and drives my boat a great deal faster than I expected."

"V. D. MOODY,
"Saranac Lake, N. Y."

"I received my engine last week and it's a 'dandy.' You are not going to get a chance to give me back my money. It runs beautifully."

"F. B. CRAVER,
"Harvey, Ill."

"Last Spring I bought a one and one-half horsepower L. A. motor for small boat, at the same time I bought a three horsepower. Now I am in love with my little L. A. and I want to sell my other engine and put one of yours in its place."

"J. M. WEST,
"Clarendon, Ark."

"Talk about a good motor—that motor of mine is better than good. Yesterday, the fourth, I won the free-for-all over all entries at the big races on this Lake."

"H. M. HARPER,
"Diamond Lake, Cassopolis, Mich."

Thousands of Motor Boat Owners Approve the Lockwood-Ash Method of Selling

LA Marine Motors

During the past season we have sold thousands of Lockwood-Ash Motors, all by our direct-from-factory-to-user plan.

We have proved to our satisfaction and that of our customers that this is the best way to sell an honestly built marine engine.

Hundreds of our customers have written in to tell us how pleased they are, not only with the way L-A Motors run, but also with our way of doing business.

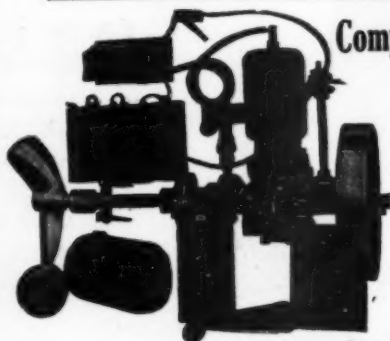
Why Pay the Dealer a Big Profit?

Remember this: when you buy an engine through a middleman you are the one that pays his profit. It is tacked right onto the price of the engine.

When you order a Lockwood-Ash motor, you know just what you are getting for your money. You try it 30 days and if it doesn't line up to all our claims for it—if it doesn't suit you in every way, all you have to do is send it back at our expense. You take no risk at all.

Immediate Delivery. Six Models, 1½ to 12 H.P., \$36.25 to \$175.50. Complete and Ready to Run. All Guaranteed for One Year and Sold on 30 Days' Trial.

No strings to this offer, no freight to pay. Just send for any of our complete outfits, and if it doesn't delight you, send it back at our expense. The 1½ H.P. motor and complete outfit shown in illustration, only \$36.25—a clear saving of at least \$13.75. Post yourself on power boating, and the safest, cheapest way to buy by writing today for our latest catalog.



**Complete 1½ H.P.
Outfit**

as shown, including ignition system, shaft and propeller,

\$36.25

Freight paid, to any point east of the Rockies. West of the Rockies, \$39.75.

LOCKWOOD-ASH
MOTOR CO.
302 Horton Ave.
Jackson, Mich.

30 Day Trial-A Year's Guarantee

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EVINRUDE

On The Crest

In announcing the 1914 Models of the Evinrude Detachable Rowboat Motor

we present a startling marvel of ingenuity; a result that places them apart from marine motors in general and places them upon the very crest of high efficiency that has never been attained in any similar devices in the world. As heretofore, Evinrude Detachable Rowboat Motors will be manufactured with the same skill and the same costly materials which have always shown in their wonderful endurance and practicability. Among the improvements and additions which identify the 1914 models are the following:

The Built-In Reversible Magneto

This magneto is so simple in construction that it has but one moving part; is entirely enclosed within the flywheel and therefore protected from injury. In starting it requires less than one-half the speed of any other magneto made, enabling one to start the motor by turning the flywheel slowly in either direction. The magneto requires no adjusting device whatsoever to make it reverse. It is so thoroughly waterproof that rain, waves, or even complete submersion will not effect it. Having no bearings, brushes or commutators to require attention or to wear out, the magneto will remain in perfect working order as long as the motor, without attention.

No Increase in Weight

Instead of increasing the motor weight, which is 50 pounds, we have made room in the flywheel for our magneto; therefore the magneto acts as part of the flywheel.

Gasoline Shutoff

An extra gasoline shutoff has been provided, which eliminates disturbing the adjustment of the carburetor.

The New 3½ H. P.

In addition to the 2 H. P. Motor, we announce our 3½ H. P. for larger boats. This size motor develops remarkable power in towing boats and is highly suitable for commercial duties. It is also equipped with the magneto and in construction is a duplicate of the 2 H. P. except for its size and additional power. Weight 90 pounds.

25,000 Evinrude Motors in All Parts of the World

Evinrude motors are now used in all parts of the civilized and uncivilized world by sportsmen, fishermen, for commercial uses and by explorers. An Evinrude Motor was purchased by Ex-President Theodore Roosevelt for his South American expedition, and other prominent explorers have used them in the past. In every instance the motor has given absolute satisfaction. The engineers of ten governments have passed upon the Evinrude motor, pronouncing it the most practical motor of its kind in the world.

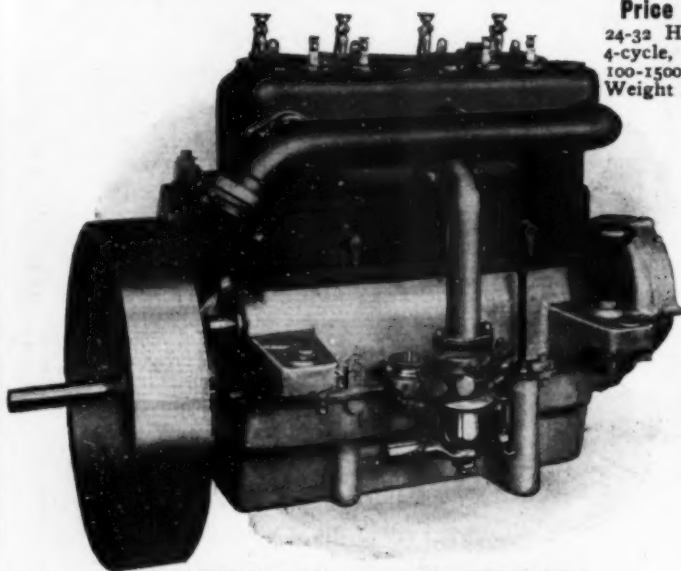
Dealer's prospectus now ready. Hardware and sporting goods dealers requested to write for same.

EVINRUDE MOTOR CO.

134 E Street, MILWAUKEE, WIS.

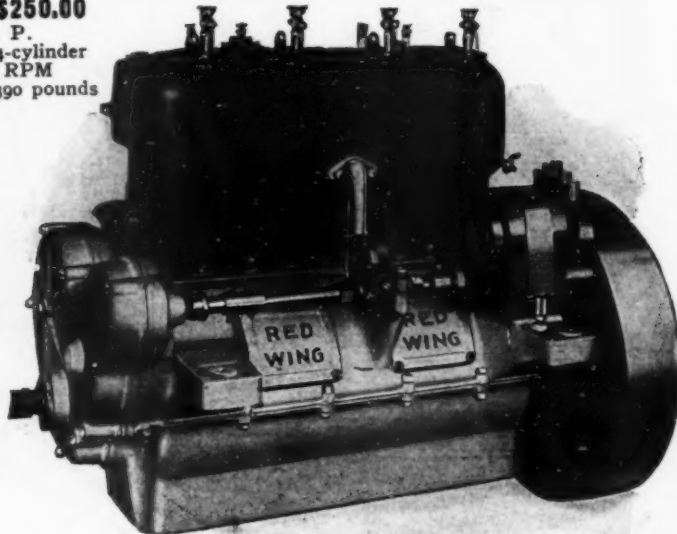


RED WING THOROBRED



Model R Schebler Carburetor, Aluminum Crank Case

Price \$250.00
24-32 H. P.
4-cycle, 4-cylinder
100-1500 RPM
Weight 390 pounds



Cams and Shaft Integral, Noiseless Helical Gears

The World Loves a Thorobred

Whether it's horseflesh or a piece of machinery, the fine, clean, capable type is what the discriminating look for. Breeding is as important in an engine as in anything else. So when we were ready to market our latest and greatest engine achievement, what name was more apt, more fitting, more descriptive of the masterpiece motor of its type and size than "THE RED WING THOROBRED"? Look at the picture of it: compact, light, powerful, beautiful in design, modern to the last detail—a perfect 4 cylinder, 4 cycle marine engine for the remarkable price of \$250, less than half any previous price placed on an engine anywhere near its equal.

We want your order for one of these engines; write us for more complete details.
DEALERS—Our agents will make you money.

RED WING MOTOR COMPANY Dept. B

Red Wing, Minn.

There's One Waiting For You Now

There's only one way any manufacturer could put out this engine at this price. We have enormous facilities. We are building hundreds of these motors for all parts of the world. Quantities minimize manufacturing cost—hence this remarkable price.

The RED WING "THOROBRED" has cylinders cast en bloc, I. head, bore 4 1/16", stroke 4 1/2"; aluminum crank case and gear housing, valve stems, push rods, etc., all inclosed; packing boxes at the end of crank shaft bearings to keep oil from leaving base; internal splash and pump system of positive oiling, float oil gauges; rotary water pump and model R Schebler carburetor; perfect control, flexibility and easy starting. Will throttle to a bare move, or speed up to 1,500 R. P. M. What more could you ask?

JOE'S Famous Reverse Gears

The Gear that is right and tight for all powers and all speeds

JOE'S DUPLEX FRICTION DRIVE Gears for heavy duty motors up to 45 h. p. per 100 R.P.M. The gearing is quadruplex and the duplex friction drive is arranged to take the driving strain off of the gearing on the go ahead. THE ONLY COMMERCIAL GEAR on the market for big heavy duty work, having the same speed forward and reverse. BUILDERS OF BUSINESS MOTORS, this is the gear that you are looking for. Write for particulars.

JOE'S HIGH POWER gears for fast and medium speed motors.

JOE'S POSITIVE neutral one way clutches for high speed motors.

IMPORTANT ANNOUNCEMENTS

The Snow & Petrelli Mfg. Co.
154 Brewery Street,
New Haven, Conn., U. S. A.
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L. H. Coolidge Co., Seattle, Wash.
The Canadian Motor & Supplies Co., Montreal, Canada.
The Fairbanks Co., Hamburg, Germany.
The Gasoline Engine Equipment Co., 133 Liberty St., N. Y.



JOE'S SAFETY REAR STARTER

Made in two sizes up to 40 h. p. Larger ones made special. Non-kick back, positive release, Chain stopped from running, furnished with frame or bulkhead bracket as desired.

Write for prices.

We have the best gear in the world for your boat.

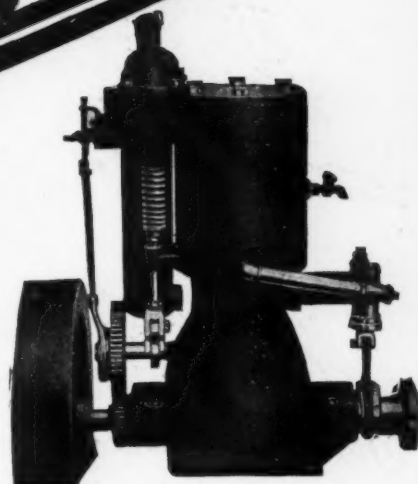
Write us the size and type of your boat and engine, and we will say the rest. Write for catalog.

Joe's
Reverse
Gear,
1914 Model.



WOLVERINE

The Motor with the Bore and Stroke



Every marine engine is built for a certain purpose—to meet the demands of heavy service perhaps—or maybe for economy, speed, reliability, cheapness, durability. Don't hitch a race horse to a heavy dray or a truck horse to a pony cart. Get the motor that is adapted for your purpose, and be sure you have the right motor for that purpose if you want satisfactory results.

For Cruisers, Fishing Boats, Cargo Boats, Tugs, Barges and all types of commercial craft, the one *right* motor for the purpose is the

WOLVERINE THE MOTOR WITH THE BORE AND STROKE

Wolverine Motors have always been famed for their strength, reliability and excess of power over their ratings. They are of the heavy-duty slow-speed type with ample bore and stroke and ample allowances of strength to withstand the strains of the most severe service.

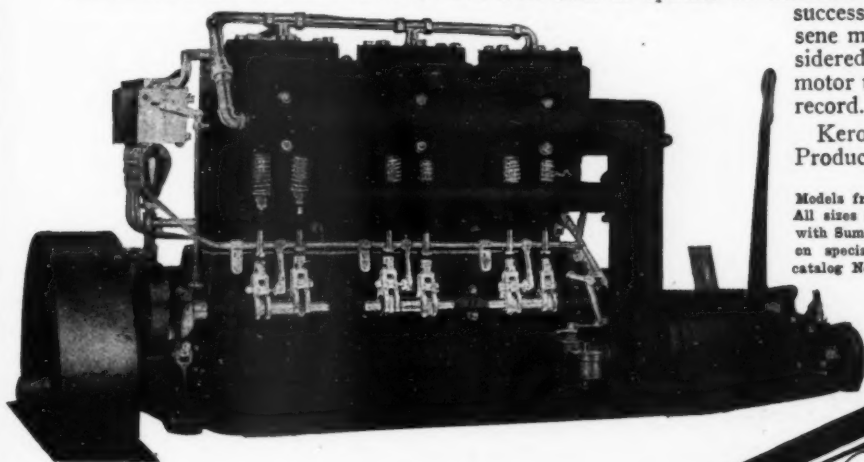
For 1914 we have developed a new Kerosene Device that will be fitted on all Wolverine Motors. Contrary to usual custom this device does away entirely with the necessity of preheating the charge. It materially reduces the quantity of fuel required per H. P. and gives wonderful results in respect to flexibility.

The minimum speed of 150 R. P. M. with gasoline is reduced by the new kerosene device to 95 R. P. M. under full load. The motors can be run at varying speeds on kerosene with absolute certainty; they will not stop. Carbon in the cylinders is practically eliminated. This is positively the greatest kerosene development of the times.

Remember that Wolverine Motors have been built to operate on kerosene for more than ten years past. They successfully met the foreign demand for kerosene motors long before it was seriously considered in America. Don't buy any kerosene motor until its success has been proven by past record. The Wolverine is a safe buy.

Kerosene, Paraffin, Gasoline, Petrol, Suction Producer Gas, Alcohol, Distillates.

Models from 5 to 300 H.P. 4 Cycle Type. All sizes above 5 H.P. regularly equipped with Sumter Gear-Driven Magneto. 5 H.P. on special order. Write today for our catalog No. 90.



Wolverine Motor Works

Bridgeport, Conn., U. S. A.

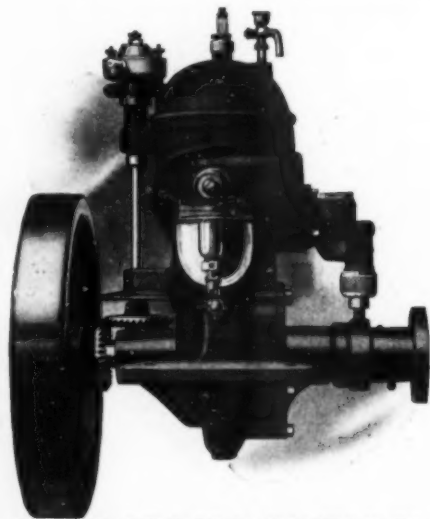
Formerly at Grand Rapids, Mich.



—MENHADEN FISHING SCHOONER "M.M. MARKS" 75 H.P. WOLVERINE SUCTION PRODUCER GAS ENGINE.

THE FLIGHT OF

**Matchless in Price and Efficiency. The
Lighter and Better than Two Cycle Engines Us
No Substitution Necessary. Made in High Speed,**



1914 High Speed Single Cylinder, Model "K," 3 1/2 H.P.,
Bore 3 1/4—Stroke 3 1/4—Weight 90 lbs.

Completely Equipped

with Schaebler carburetor, "Black Eagle" spark plug, roller contact timer, bronze plunger pump with self-contained check valves, priming cup, grease cups, ball thrust bearings, flange coupling, "Eagle" water-cooled exhaust silencer, wrenches, screw driver, can of cylinder oil, can of grease, two oil cans, lag screws, and instruction book.

Price, \$50.00

SECURITY

Back of all "Eagle" Engines there is a *greater financial guarantee* than on *all other makes of two-cycle engines combined*.

Pause a moment and consider the importance of the above statement. When an engine loses its maker, through failure or otherwise, its market value immediately falls 50 to 70 per cent. The engine is instantly discredited, commanding neither price nor respect. Nobody wants it, least of all the owner.

After you have put your faith and money into an engine, then is when it needs a maker back of it with the financial strength and moral determination to make good every promise that his advertising or his salesmen held out to you *before you bought*.

"Eagle" Engines have been manufactured under the same general management for fourteen consecutive years. An owner can secure promptly parts for any style of "Eagle" Engines sold during this period. No user of an "Eagle" Engine was ever obliged to discard it because he was unable to secure some needed part.

Considering the many failures among engine builders and the fact that, with a few exceptions, none have survived over two to three years at the most, it seems unnecessary to point to our long and successful business career and suggest to you the importance of our position as factors in the Manufacture of Marine Engines.

THE STAN Torrington,

1914 EAGLES

**Leader in Quality, Design and Variety.
usually Offered. An Engine for Every Purpose.
Medium Speed and Extra Heavy Duty Models.**

We realize only too well that the highest honor paid "Eagle" Engines lies in what their owners expect of them. They have expected much in the past: they will receive more in 1914. On and on goes the work of improvement. There are no lessening efforts on account of our past achievements. Our engineering department is ever zealous of "Eagle" superiority, and 1914 will find them as individual in design and construction as in the past.

Following the law of supply and demand, and the fact that the Engine business is largely concentrating to the live and practical manufacturers, you are enabled to buy better engines at a more reasonable price today than ever before.

"Eagle" Engines will be shown in large variety at the National Boat and Engine Shows that will be held in New York City and Chicago the early part of 1914.

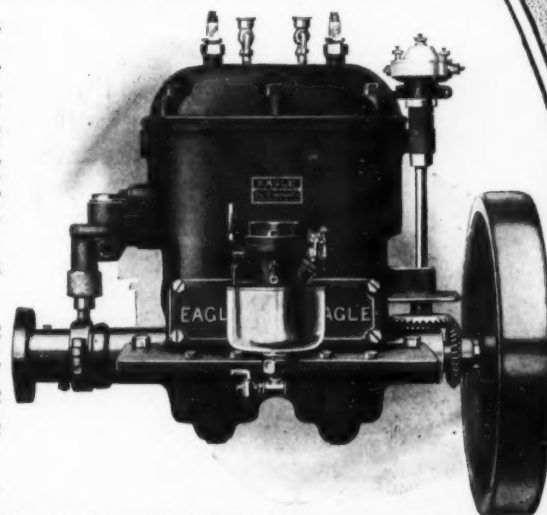
Boat Builders who use Engines in quantities, and who build stock boats will find our 1914 proposition of much interest and a line will bring you our representative promptly.

It will be to your interest to investigate what we have to offer in the way of Engines and prices. Just stop and consider what it means to you as a dealer, boat builder or owner to have back of you one of the greatest, and most up-to-date business organizations in America.

Our great investment enables us to ship promptly Engines when you want them, each in perfect running order, thoroughly tested under load and ready for immediate use.

Catalogue mailed free upon request.

DART CO.
Conn., U.S.A.



1914 High Speed "Eagle" Two Cylinder, 7 H.P., Bore $2\frac{1}{4}$ in., Stroke $3\frac{1}{4}$ in., Weight 130 lbs.

Completely Equipped

with Schebler carburetor, "Black Eagle" spark plugs, roller contact-timer, bronze plunger pump with self-contained check valves, priming cup, grease cups, ball thrust bearings, flange coupling, Eagle water-cooled exhaust silencer, wrenches, screw driver, can of cylinder oil, can of grease, two oil cans, lag screws and instruction book.

Price, \$95.00



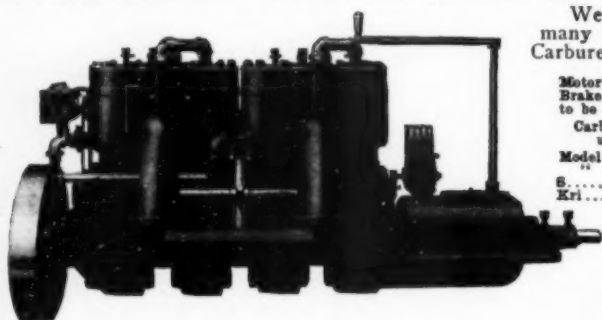
KNOX MOTORS FOR 1914



KNOX MOTORS have given such universal satisfaction throughout the season of 1913 that no changes in construction will be made for the 1914 market. But this, our 1914 announcement, is not without interest to motor buyers, because we have a radical improvement to announce in the already-famous Knox Kerosene Carburetor.

The Knox was one of the original Kerosene burning engines, perhaps the first to use cheap fuel satisfactorily in all sizes of marine motors. It demonstrated by actual service that kerosene fuel was practicable while other makers were saying "Impossible" and a few were maintaining a discreet silence on the subject, waiting for the Knox to settle the argument. The Knox created the present great demand for kerosene engines. It has been operated with kerosene successfully for five years and is still as far in the lead as it was five years ago.

The new Model "E" Knox Carburetor—our 1914 model—enables the operator to use kerosene under all conditions and even to start the motor cold on kerosene in ordinary weather. It gives more power with kerosene than the same size motor will develop on gasoline. It eliminates all possible objections of other kerosene devices. Easy starting, smooth operation, maximum power, and speed, smokeless and odorless exhaust are assured results with the Knox Carburetor.



We ask you to read carefully results of a few of the many tests we have carried on with our model "E" Carburetor.

Motor used, 2 cyl., 30 H.P., 4 cycle Knox, 7" bore and 5" stroke. Brake used, for measuring H.P., water-cooled pony brake. Weight to be lifted, 40 lbs.

Carburetor used	R. P. M.	H.P. Developed	Fuel Consumption Pts. per H.P.	Fuel used
Model "E" Knox	614	23.35	1.088	Kerosene
"	610	23.44	1.07	Gasoline
S.	575	21.9	1.15	"
Kri.	615	23.4	1.23	"

Note the saving in fuel with the Knox Model "E" CARBURETOR.

Note the saving in money if kerosene is used in place of gasoline. Gasoline is costing you 20c per gallon and kerosene can be bought for 10c per gallon.

The above tests were carried on in our experimental room and are guaranteed.

Don't get a kerosene experiment. Buy a Knox and be sure. Even on gasoline our Knox, with its Model "E" Carburetor is a money saver for you.

Write to-day for catalogues

CAMDEN ANCHOR ROCKLAND MACHINE COMPANY
CAMDEN, MAINE

Salesrooms:

W. H. Pieper, 99 East Bay St., Charleston, S. C.

H. H. Trefethen, Merrill's Wharf, Portland, Maine.

Kaye & McAllister, 160 Prince William St., St. John, N. B.

E. F. Perkins, Chestertown, Md.

Tracy Lewis, St. Petersburg, Fla.

J. P. Haliburton, Bonne Bay, Nfd.

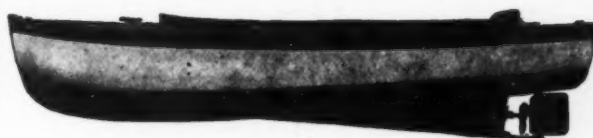


KNOX

Family Runabouts

Just What You Have Been Looking For A REAL Family Runabout at a Moderate Price

A GREAT big-little-boat, 20 ft. over all, 5 ft. 10 in. beam; will carry easily ten persons. We are offering this as a specialty for 1914. **ONE PRICE TO ALL**—no commissions to anyone—shipped direct from the factory.



Price complete, fitted with 3-4 H. P. Knox, speed 8 miles, in the water or f. o. b. Camden.....	\$295.00
Price complete, fitted with 12 H. P., two-cylinder Eagle, Model 2-o, speed 15 miles, in the water or f. o. b. Camden.....	345.00
Extra cost for reverse gear for either the above outfits.....	25.00
Price for boat complete with motor foundation, no motor or motor outfit, in the water or f. o. b. Camden.....	195.00

THE SPECIFICATIONS IN BRIEF ARE AS FOLLOWS:

Length overall 20'
Beam 5' 6"
Draft 1' 6"
Planking $\frac{1}{2}$ " Maine cedar
Frame, Maine Gray Oak throughout
Brass screw fastened
Planksheer, coaming, lazy back for seats, beading around seats, and bulkhead cap, mahogany

Deck, Maine cedar laid in narrow strips, covered with canvas
Ceiling cypress.
Below water line two coats of Royal Green. Above water line, outside, three coats of marine white; balance of boat finished bright, two coats of marine varnish.
Hardware throughout polished brass
Rudder, tiller and skeag, galvanized iron
Gasoline tank, galvanized iron, capacity 18 gals.

Do Not Lose This Opportunity. Write At Once

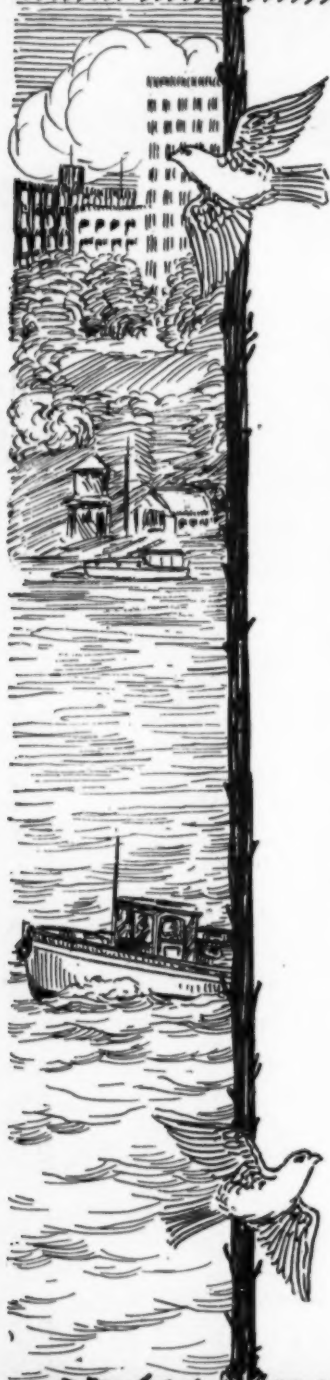
We GUARANTEE this boat to be just as represented, very sea-worthy, good for lakes, rivers or open bays.

We still have our KNOX YAWL LAUNCHES to offer, sizes ranging from 19 ft. to 30 ft., and are in a position to build any type of boat from specifications and plans up to 125 ft. UNDER COVER, or will furnish specifications and plans for any type of boat the customer may desire.

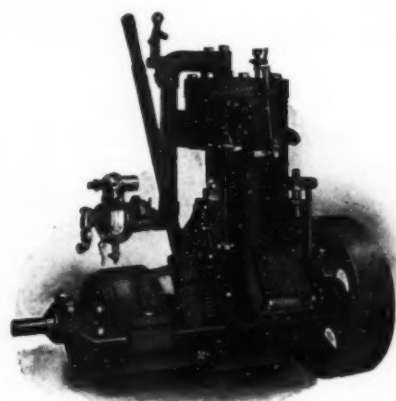


CAMDEN ANCHOR ROCKLAND MACHINE COMPANY
CAMDEN, MAINE

"Automatic"



THE AUTOMATIC four-cycle marine engine insures dependable, economical power. It is the engine that will drive your boat day-after-day at the lowest possible cost of operation and upkeep. With the AUTOMATIC you know that your boat is always under complete control—to go ahead—to stop—to back just when and where you desire. And you know that every part of the engine will "stand up" under the hardest kind of work.



To obtain efficient service, to practically eliminate repair bills and to be able to rely upon your engine — install an AUTOMATIC.

Boston: 4 Long Wharf.

Baltimore: 730 E. Pratt St.

Charleston, S. C.: W. H. Pieper.

Norfolk, Va.: Wallace Bros.

and Morehead City, N. C.

Galveston, Tex.: 2105 Strand.

Mobile, Ala.: Marine Supply Co.

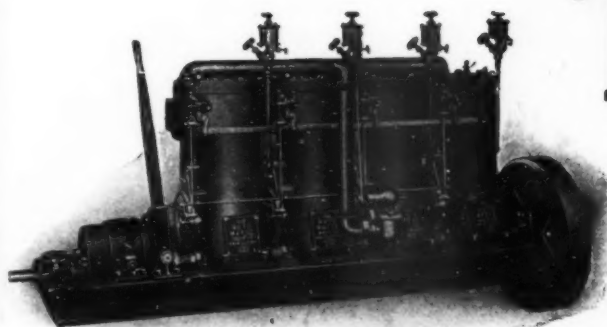
New Orleans, La.: 862 Tchoupitoulas St.

Jacksonville, Fla.: H. E. Ploof Machy. Co.

Automatic agents in Austria, Australia, England, Fiji Islands, Holland, India, Japan,

THE AUTOMATIC BRIDGEPORT

Marine Engines



THE AUTOMATIC is suitable for launch, cruiser or commercial boat. It is built in twenty sizes, from 3 to 250 H. P., with one to six cylinders.

The cylinders are separate and independent; the crank shaft is hammered — not drop forged; the valves are large and may be removed without taking off the cylinder head; a powerful reverse gear is built on the engine bed. Multi-cylinder engines are regularly equipped with two separate ignition systems, with geared high tension magneto.

Tell us how much power you require and we shall be pleased to send you complete specifications of the engine that will fit your needs.

Seattle Branch: 80 W. Marion St.
Portland Agency: Rierson Mchy. Co.
Vancouver, B. C.: A. R. Williams Mchy. Co.
San Francisco, Cal.: Norman B. Miller Co.

Newfoundland, New Zealand, Norway, Russia, South America and Spanish Honduras.

Dealers in Canada:

The A. R. Williams Machinery Co., Toronto
Pyke-Putnam Motor Co., Montreal

MACHINE CO. CONNECTICUT

When writing to advertisers please mention MOTOR BOATING, the National Magazine of Motor Boating.





Crockett's Spar Composition

The best known and most durable marine varnish in the world. The acknowledged standard with ship, yacht and motor boat builders. Positively salt and fresh water proof, it has no equal for exterior marine use or outdoor work of any kind. The deep brilliant lustre is not affected by the severest exposure. It will not spot, crack, blister or scale and cannot turn white.

Crockett's No. 1 Preservative

The best interior finish that brains and experience can produce for use on steamships, yachts and motor boats. Less liable to mar or scratch than any finish known. Is not affected by the use of hot water and soap. Can be rubbed and polished, or left with an egg-shell gloss.

Crockett's Waterproof Floor Finish

The only reliable finish to use on the floors of yachts and motor boats. Heel marks do not show white on it. Can be washed with hot water and soap, the only way to keep a floor clean.

Send for Booklet "WHAT TO USE AND HOW TO USE IT."



THE DAVID B. CROCKETT CO.

VARNISH MAKERS

BRIDGEPORT, CONN.

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GUERNSEY BAILIWICK MOTOR BOAT ASSOCIATION 2ND. ANNUAL CRUISE - GUERNSEY (C.I.) ENGLAND



Showing Portion of Fleet at Jephthou..

Photo by Courtesy of Guernsey Bailiwick Motor Boat Ass'n.

33 motor boats entered this cruise, out of which there were 14 boats equipped with

Gray Motors

It is a well-known fact that the English are mighty good judges of machinery.

They know good engines.

And they have some mighty good machines to select from built right in their own country.

It is therefore very significant when you know that in many parts of England Gray Motors predominate.

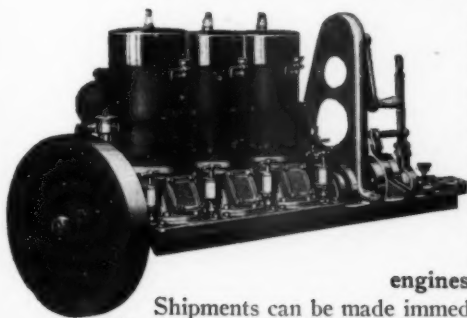
Take the above cruise for example—out of the 33 entries there were 19 boats

equipped with well-known American-made motors, and **14 of this number were Grays.**

A truly wonderful showing—and, incidentally, we might mention that a Gray-equipped boat won the "Go-as-you-please" race home.

We repeat, the Englishman knows good engines—his decisions are not haphazard—he uses keen judgment and buys to get the maximum power and service at the minimum cost.

Special December Prices on Heavy Duty Motors



During the fall and winter months our factory works almost exclusively on heavy-duty power plants—especially on 24 H.P. and 36 H.P. Model "Ts."

In order to facilitate our manufacturing schedule and keep our factory humming right up to the time we start machine work on smaller sizes, we will make special prices on all 21-24 and 36 H.P. engines ordered before January 1, 1914.

Shipments can be made immediately on receipt of order or later, at purchaser's option, but the order, with small payment down, must be received on or before January 1st. Remember, we can furnish special equipment for paddle-wheel outfits. Write today for complete details and be sure to mention this special offer.

GRAY MOTOR CO., 1274 GRAY MOTOR BUILDING Detroit, Mich.

GRAY MOTORS FOR BOATS—all sizes up to 36 H. P.

3 H. P., guaranteed to develop 4 H. P. Complete outfit **\$55**

6 H. P., guaranteed to develop 7 H. P. Complete outfit **\$89.50**

12 H. P. A powerful two cylinder motor that will develop 13 to 16 H. P. Price for complete outfit **\$178**

MODEL "T"
Kerosene or Gasoline

Made in 1, 2 and 3 cylinders, 7 to 36 H. P. Price with complete outfit, **\$115 up.**

Write for big engine book "M."



30' x 5 1/2' Runabout OTSEGO, owned by J. M. Bowers, of New York City. 30-45 H. P. STERLING motor. Speed 23 miles per hour.

Excess value has assured Matthews' success.

The Matthews Boat Company has always been conservative, and insisted upon sane and reasonable boat buying.

Its customers have been and still are its friends, because of the protection of its advice and invariable policy of square dealing.

The following letter received from the chief counsel of the Metropolitan Street Railway Company, of New York City, tells the story of continued success.

BOWERS & SANDS
Counsellors at Law
46 Cedar Street
New York City

The Matthews Boat Co.
Port Clinton, Ohio

Gentlemen: In answer to your letter of the 6th inst., I am very glad to say that the runabout you built for me is a complete success, and she equals and in truth exceeds all that I had expected, even with the knowledge I had of the high character of your firm.

The boat is in excellent running order. If there is anything we need at any time, we shall not hesitate to call upon you.

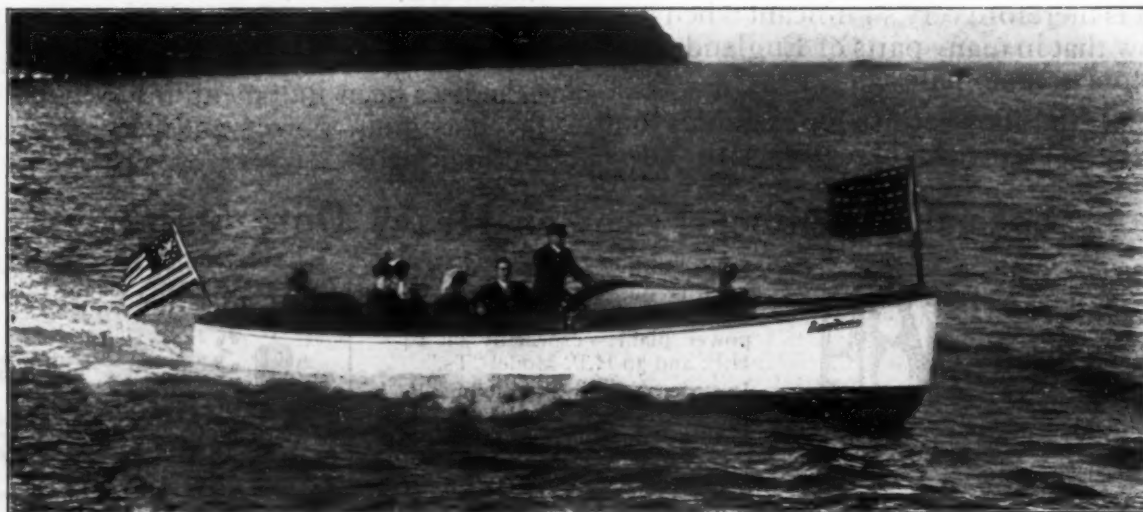
Very truly yours,

(Signed) JOHN M. BOWERS.

THE MATTHEWS BOAT COMPANY, PORT CLINTON, O.
DESIGNERS AND BUILDERS OF THE WORLD'S FINEST PLEASURE CRAFT

MATTHEWS
CRAFT

Speedway Runabout



A Sensible Boat For Family Use

Safety, Simplicity, Stability and Seaworthiness combined with Reasonable Speed
A development of 25 years experience and the building of many thousand launches.

Carried in Stock. Ready for Delivery.

Fine launch for Florida Service

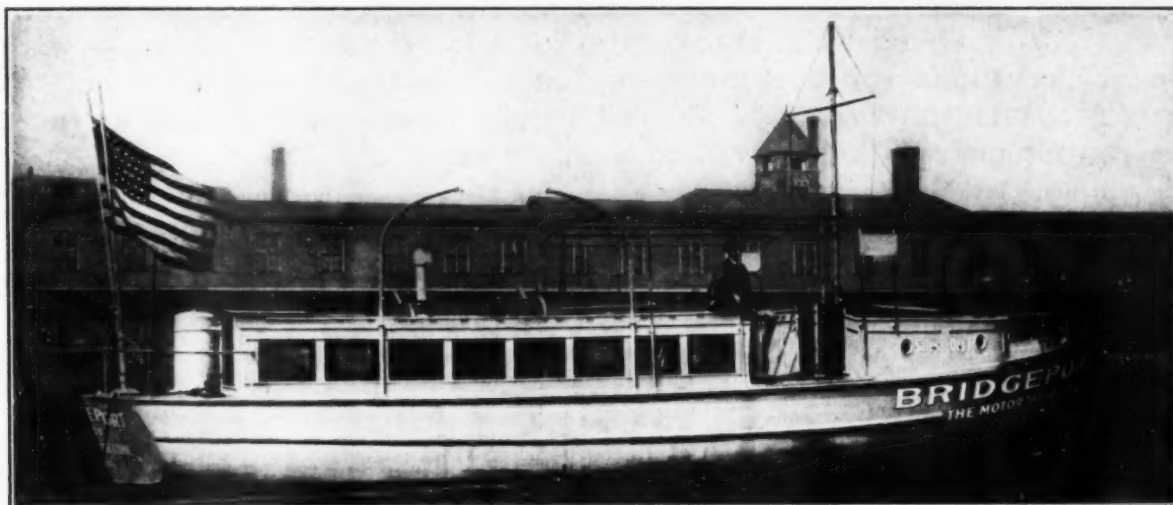
Send for Circular

Gas Engine & Power Co., and Charles L. Seabury & Co., Consolidated, Morris Heights, New York City





KEROSENE TYPE



THE above illustration is from a photograph of our salesboat No. 1. This boat is employed by our Sales Department, advertising Bridgeport motors and assisting Bridgeport agents throughout the Atlantic Seaboard.

GENERAL DETAILS OF LOG—SUMMER SEASON—1913

Length overall, 45', beam 12', draught 4'.	
Power equipment, triple screws, demonstrating 3 sizes.	
Center engine, main driver, three cylinder $6\frac{1}{2} \times 7$	27 H.P.
Port engine, single cylinder $5\frac{1}{2} \times 6$	7 "
Starboard engine, two cylinder $4\frac{1}{2} \times 5$	8 "
Total horse-power	42 "
Total number of days out from Bridgeport	132
Total number of hours underway, all motors running	399
Total gallons of kerosene used	1,700
Average fuel consumption per hour, 42 H.P., gallons.....	$4\frac{1}{4}$
Total number of miles run	3,100
Repairs to motors proper	none
Repairs to power equipment, 1 backing band for reversing gear, including expressage	\$5.50
Cylinders open for removal of carbon	1
Time operated before cleaning cylinders	105 days
Carbon deposit very slight	
Piston rings entirely free	
Bearing troubles from heating—none	
Bearing adjustments—none	

Send for free Catalog "B" of Bridgeport Non-backfiring Motors. State whether you require Kerosene Type or Gasoline Type.

Also request our special Booklet "It's Up To You." This is of great value to everyone interested in motors.

THE BRIDGEPORT MOTOR COMPANY, Inc.

Bridgeport, Conn., U. S. A.



INCREASE YOUR SPEED

BY PAINTING YOUR BOAT BOTTOM WITH

BRIDGEPORT BRONZE MARINE PAINT

You are wasting money on fuel for the power you lose if you allow your boat bottom to get overgrown with barnacles, grass and sea growth. It robs your boat of its speed, power and efficiency, consumes your fuel much too fast and makes the motor labor at speeds where it should run smoothly. A good bottom paint would prevent all this and save you far more during the season than the small cost of the paint.

Bridgeport Bronze is the most successful bottom paint known. It has been on the market several years, and is increasing in popularity and use every season. It prevents damages from the teredo or shipworm as well as eliminating barnacles, grass, etc., and preserving the wood in the hull.

Our Famous Stamp

We guarantee to refund the amount of this bill, if at the end of the season there is any sea growth on the bottom of the boat, on which two coats of our B. B. Paint have been properly applied.

Bridgeport Bronze Marine Paint Co.

The smooth surface which Bridgeport Bronze insures for your boat's bottom will increase your speed and save enough in power, fuel and deterioration to pay for itself several times over.

Bridgeport Bronze is now put up in glass jars, which positively prevent leakage and deterioration. Always fresh and in perfect condition.

Write for booklet and prices.

BRIDGEPORT BRONZE MARINE PAINT CO.
Cable Address, "Laquero, Bridgeport." **BRIDGEPORT, CONN.**

Sell Your Motor Boat or Motor in Motor Boating's Market Place

When a man is looking for a certain article he naturally refers to the place where he will be most likely to find what he wants. Thousands of readers know of the bargains that are always listed in the Motor Boating Market Place, so they look here first.

Successful advertisers follow the same course as those who are looking for something — they place their advertisements where they are most likely to be seen by prospective buyers.

Motor Boating has a guaranteed circulation in excess of 25,000 copies per issue, and every copy is seen by several persons. In this way practically every motor boat enthusiast in the country is reached, as well as the principal foreign markets. In this great audience there are sure to be several prospective customers for every article you want to sell.

We will write your advertisement if you will send full information and tell the amount of space you wish used. Enclose remittance to cover size of advertisement you want, figuring at the rate of 3 cents per word, each insertion.

MAIL YOUR ADVERTISEMENT TODAY

J. S. Hildreth
Adv. Mgr.

**MOTOR
BOATING**

119 West 40th St.
New York

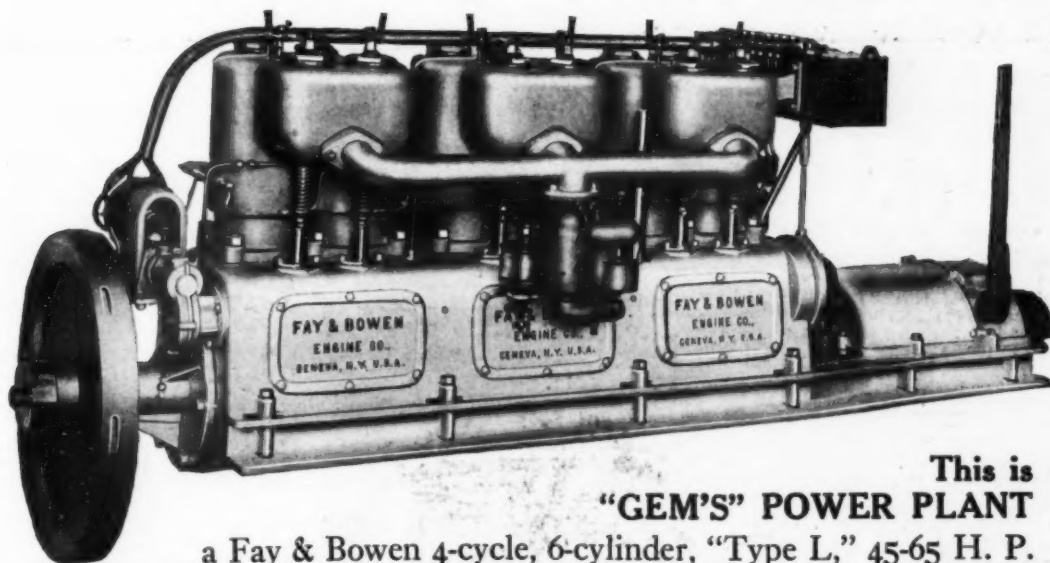
THE PERFECT POWER PLANT



This is "GEM"

A heavy cruiser, designed by M. M. Whitaker and built by Julius Petersen of Nyack, N. Y., for H. J. Jaeger of Hoboken, N. J.

HER POWER IS A FAY & BOWEN ENGINE The Perfect Power Plant



This is
"GEM'S" POWER PLANT

a Fay & Bowen 4-cycle, 6-cylinder, "Type L," 45-65 H. P. Engine. Bosch Magneto Ignition, "Two Independent" type. Force Feed Lubrication everywhere. Fay & Bowen multiple-disc, oil-tight Reverse-clutch.

THERE IS no better engine built than the Fay & Bowen. Whether the 4-cycle or the 2-cycle, they always sustain their established reputation for service and reliability.

SEND FOR OUR LITERATURE

FAY & BOWEN ENGINE COMPANY
NO. 104 LAKE STREET GENEVA, NEW YORK, U.S.A.

THE PERFECT POWER PLANT

When writing to advertisers please mention MOTOR BOATING, the National Magazine of Motor Boating.

ANNOUNCEMENT!

WE take pleasure in announcing that **FULTON ENGINES** will now be furnished in four (4) separate and distinct types, each suitable for a special type of boat and class of work. We are placing these engines on the market only after having tested them out in actual service in boats for several years under the hardest service and each type of engine has proven itself worthy of the name **FULTON**.

THESE FOUR TYPES ARE AS FOLLOWS:

FULTON SELF-SPARKING. A medium duty 2-cycle engine built in six sizes, ranging from $3\frac{1}{2}$ to 18 H. P., equipped with our self-sparking ignition, which does away with all coils, batteries, etc. Especially suitable for small cabin cruisers, open boats and small commercial boats.

(Can be furnished to operate perfectly on kerosene)

FULTON SPECIAL. A light weight 2-cycle engine built in four sizes, ranging from 4 to 16 H. P.; jump spark ignition; especially suited to small V-bottom boats, fast runabouts, speed boats, etc.

(Can be furnished to operate perfectly on kerosene)

FULTON FLYER. A light 4-cylinder, 4-cycle model, built in three sizes, 30, 40 and 50 H. P. each; completely

equipped with reverse gear, high tension with dual magneto; especially suitable for use in fast runabouts, speed boats and light day cruisers.

FULTON HEAVY DUTY 4-CYCLE. A heavy duty 4-cycle model built in twelve sizes, ranging from the 2-cylinder 12 H. P. to the 6-cylinder 150 H. P. A high grade heavy duty 4-cycle engine completely equipped with extension base, reverse gear and jump spark ignition, especially suitable for use in cruising yachts, auxiliaries, freight boats, fish tugs and commercial boats of all sorts.

Before buying your next engine, be sure to see the **FULTON** dealer in your district. He can give you a high grade engine just exactly suited for your special boat. An engine that is fully guaranteed and backed by a company financially responsible. Write for catalogues.

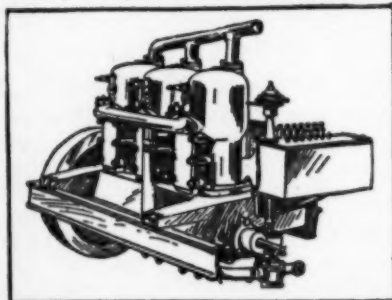
Fulton Manufacturing Co., 1052 West 12th Street, Erie, Pa.

ALBERT E. ELDREDGE CORP.
30-50 Church Street, New York

WM. N. JARVIS & CO.
Bourse, Philadelphia, Pa.

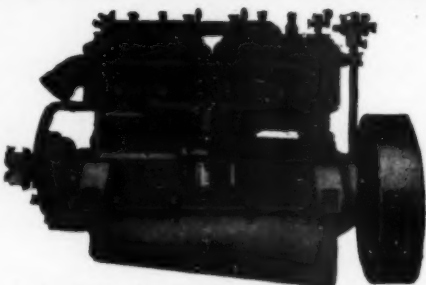
NICHOALDS 4 CYLINDER 4 CYCLE MOTORS \$100.-

Specifications of "Nicholds" 4 Cylinder, 4 Cycle, 3 1-2 in. x 4 in., 10-12 H. P. Marine Motor
CYLINDERS—Grey iron; cast in pairs; water-jacket integral; bore, $2\frac{1}{2}$ in.
CRANK CASE—Grey iron; removable lower half forms oil-pan.
CRANK SHAFT—Drop-forged; diameter, $1\frac{1}{2}$ in.; three die-cast bushings, $1\frac{1}{2}$ in. x $3\frac{1}{2}$ in., $1\frac{1}{2}$ in. x 3 in., and $1\frac{1}{2}$ in. x $2\frac{1}{2}$ in.; fly-wheel flange forged integral.
CAM SHAFT—Drop-forged; cam forged integral; hardened and ground; three die-cast bushings, $1\frac{1}{2}$ in. x $1\frac{1}{2}$ in.; time-gears grey iron and steel.
PISTONS—Special grey iron; three rings, ground; oil-groove at bottom; pins, $\frac{1}{8}$ in. steel tubing, hardened and ground; piston forms bearing for piston-pin.



THREE CYLINDER RELIANCE MOTOR \$75

New Kingston Carburetors
 $1\frac{1}{4}$ and $1\frac{1}{2}$ inch - \$3.50 each
Force Feed Oilers From one feed up \$3.00 each upward



Starboard Side of Motor Showing Carburetor, Oil Pump, Intake and Exhaust Pipes.

Price \$100

We always carry a full line of Motor Boat and Automobile Accessories. Write for our price list.

WE ONLY HAVE A LIMITED NUMBER OF THESE MOTORS. DON'T PUT OFF IF YOU ARE INTERESTED. ORDER AT ONCE.

CONNECTING-RODS—Drop-forged, 9 in. centers; bushings die cast, $1\frac{1}{2}$ in. x $2\frac{1}{2}$ in.; cap attached to connecting-rod by two bolts.

VALVES— $1\frac{1}{2}$ in. diameter; nickel-steel heads, electrically welded to stems, which are ground; valve-caps grey iron, square tops; tappets hardened and ground; valve-springs and stems enclosed.

INTAKE MANIFOLD—Grey iron; removable without detaching exhaust manifold.

EXHAUST MANIFOLD—Grey iron; attached by drop-forged clamp; tapped for 2 in. pipe.

FLY-WHEEL—15 in. diameter; bolted to flange forged on crank-shaft.

LUBRICATION—Splash system, with auxiliary plunger pump; oil-level automatically maintained; glass sight-feed gauge.

Regular equipment includes carburetor and water pump.

MARINE REVERSE GEARS

These are brand new first quality goods and come in three sizes:

No. 1. Suitable for a $4 \times 4\frac{1}{2}$ motor, 2-cylinder, driving a propeller not over 17-inch.
Price\$12.00

No. 2. Suitable for 4-cylinder motor of $4\frac{1}{4} \times 4\frac{1}{4}$, driving a propeller not over 20 inches.
Price\$19.00

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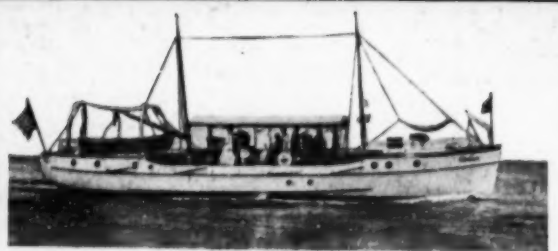
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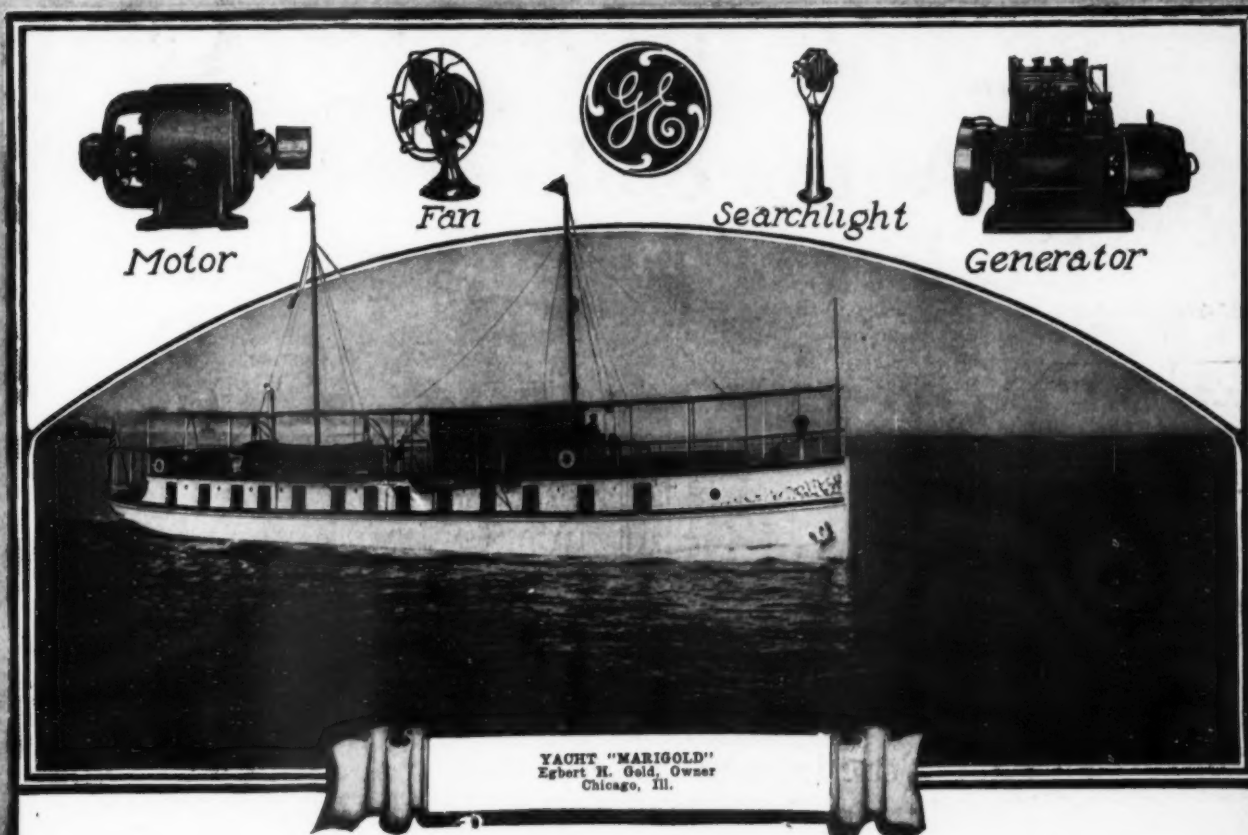
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will be ready about January 15th.

Send in your application now with 20c in stamps to cover postage. We refund this on your first order.

This new book will be the most important Marine Supply Catalog in the trade.

We cordially invite the yachting fraternity to visit our exhibit at the Chicago Motor Boat Show, February 28th to March 7th, 1914.

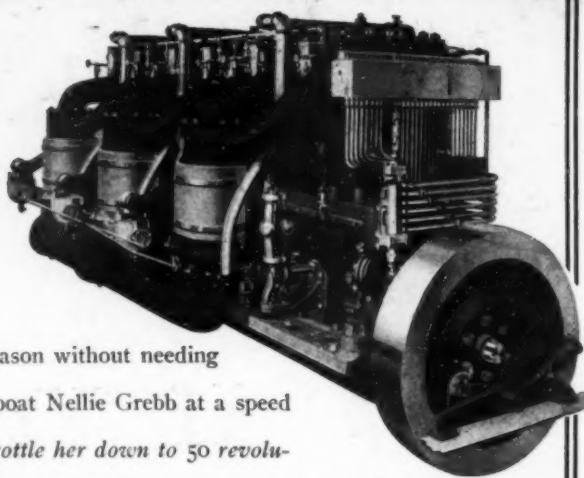
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Concerning the Kerosene-Equipped 125-150 h. p. "Buffalo" Heavy Duty Engine In His Tug Boat, Louis Grebb of Baltimore Says:—



"This engine has run over 6000 miles on Chesapeake Bay this season without needing any engine repairs.

"The 125-150 H. P. 'Buffalo' Heavy Duty drives the 50-ft. tug boat Nellie Grebb at a speed of 12 miles per hour, in spite of her 11-ft. beam and 7½-ft. draft.

"The boat can pull two loaded scows, 300 tons each, and I can throttle her down to 50 revolutions per minute on kerosene.

"I have been running the boat daily since the engine was installed, and she is running fine, and giving perfect satisfaction.

"The fuel consumption is about 10 gallons per hour."

"The Engine of Constant Service"

"Buffalo" engines are built in all sizes from 3 to 150 H. P., slow speed, medium speed and high speed.

They are powering work boats, speed boats, launches and cruisers of all kinds.

They operate on either gasoline or kerosene.

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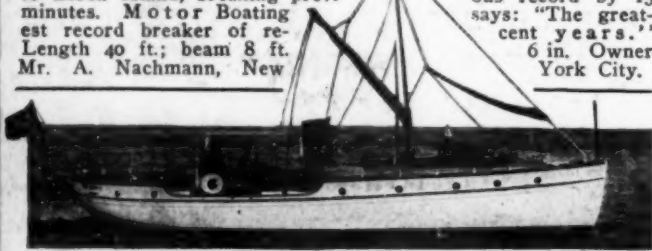
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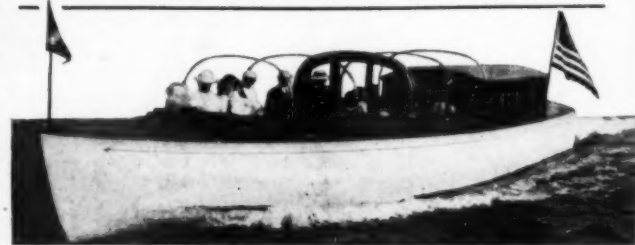
BLUE PETER V

A fast Raised Deck Cruiser, built by the Holmes Motor Co. and powered with a 6 x 8½ in., 40 H. P., 4-cylinder Holmes motor. Won the first and time prizes in the 270-mile race from New York to Albany and return, breaking the previous record by 3 hrs. and 40 min. Won time prize in ocean race to Block Island, breaking previous record by 15 minutes. Motor Boating est record breaker of re-length 40 ft.; beam 8 ft. Mr. A. Nachmann, New York City.



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A speedy Day Cruiser, built by the Holmes Motor Co. and powered with a 6 x 9 in., 60-70 H. P., 6-cylinder Holmes motor. Comfort and luxury combined with good speed are the marked characteristics of this boat. Length 50 ft.; beam 8 ft. 3 in. Owner, Mr. G. F. Heublein, Hartford, Conn.

Inquiry invited. Full explanation of our facilities for fine boat building gladly submitted upon request. Let us send you names of some of our customers for references. See Our Engine Ad. as usual on the upper inside back cover.

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357-359 Atlantic Avenue, Boston, Mass.

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1904

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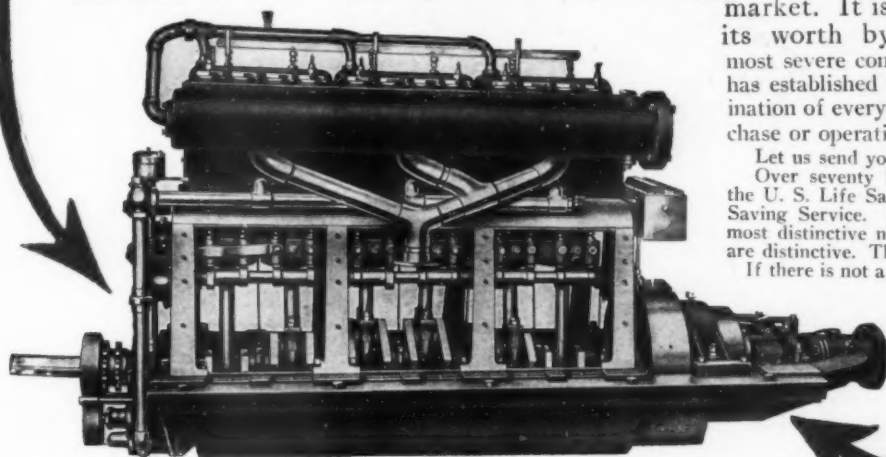
Gentlemen—Mr. Swasey, of Swasey, Raymond & Page, told me this summer that the "EARLY DAWN IV," which you built for me last spring, is one of the very best boats they ever designed. I have cruised outside with her this summer in the worst kind of weather, and I had the comfortable feelings at all times that I had a good boat underneath. The fact that the Model G Holmes motor in her has run like a watch all summer and has kept her in the lead of the procession in boats of her class, has also, of course, pleased me.

I feel that you gave me more than my money's worth, and I also appreciate the courtesy which you have at all times shown me, as it has been a pleasure to do business with you.

If you want to refer anybody to me at any time, I will be glad to tell them what I think of a Holmes Built Boat and the Holmes Motor. They are in a class by themselves.

October 20, 1913.
Yours truly,
J. E. DOHERTY.

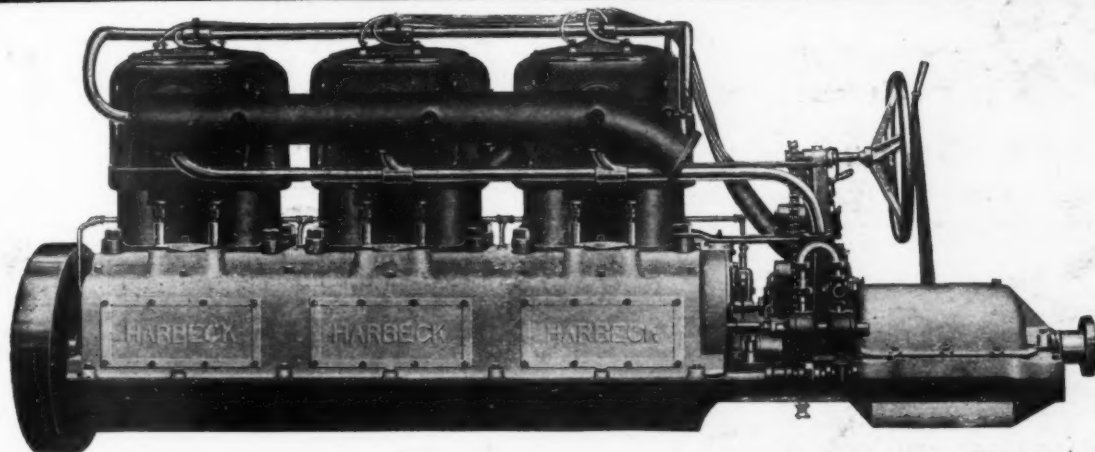
The Holmes Motor is gaining faster in popularity than any other high grade engine in the marine market. It is winning on merit, demonstrating its worth by actual performance under the most severe conditions of service. In the past season it has established a record which invites the careful examination of everyone who has to do with the selection, purchase or operation of a really first-class power plant.



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If there is not a Holmes agent in your territory, we want one.

**The Holmes Motor
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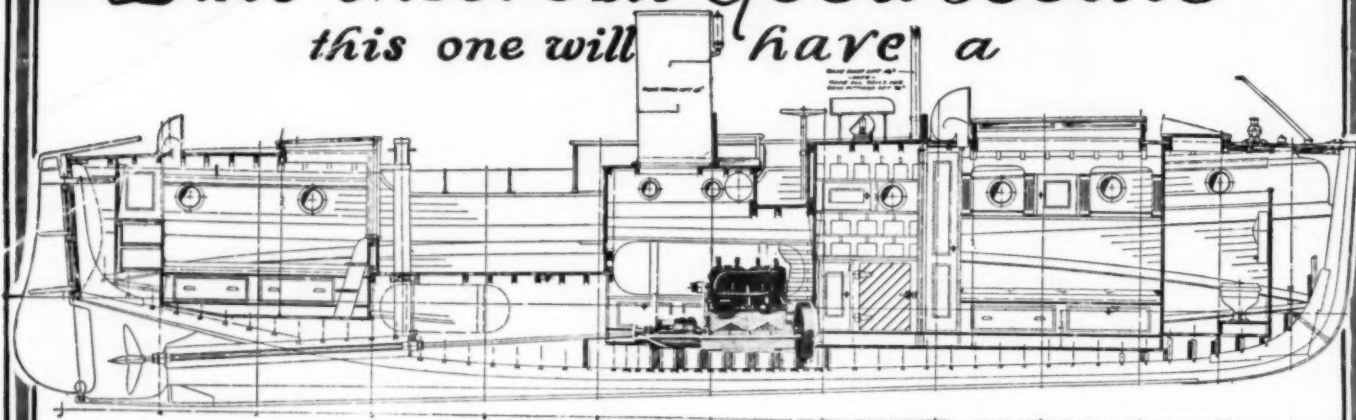
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*Like Most All Good Boats
this one will have a*



Sterling

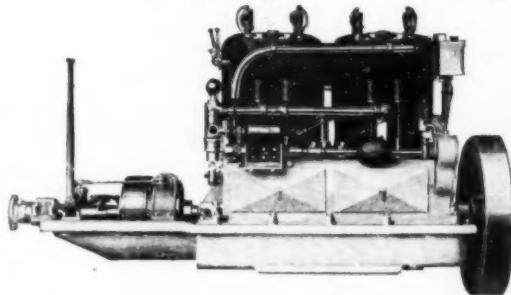
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*For the
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The plan above is from the design of a 40-foot cruiser by Swasey, Raymond & Page, Inc., for Mr. W. T. Warren of Chicago. As it is to be used on the Great Lakes, the design has been worked out for strength and reliability combined with unusually good speed in a bad sea.

Recognizing that the motor equipment is the final arbiter of any boat's speed and reliability, a 25-35 H. P. STERLING will be installed in Mr. Warren's new boat. This is just one typical instance of the recognition the STERLING has earned from the leading designers of the country. It is an example which serves as a guide to every prospective builder.

Sterling Engines are used in all types of craft, tenders, hydroplanes and working boats, and motor boats from the runabout to the most pretentious cruisers. There is a STERLING model for every size and type of boat, including one particularly adapted to the boat you have in mind. Our catalog tells about it. Write your name on the bottom margin of the page and mail to us.



25-35 H. P. STERLING. Bore $5\frac{1}{2}$ in., Stroke 8 in., Weight 1600 lbs. Net price with regular equipment, f. o. b. Buffalo, \$1350.00.

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